



SECOR
INTERNATIONAL
INCORPORATED

www.secor.com

290 Conejo Ridge Ave., Suite 200
Thousand Oaks, CA 91361
805-230-1266 TEL
805-230-1277 FAX

SITE CONCEPTUAL MODEL UPDATE

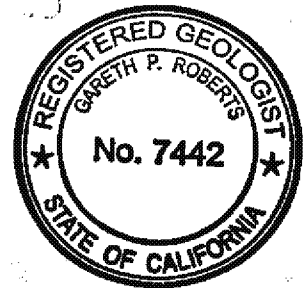
FOURTH QUARTER 2004

ARCO STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CALIFORNIA
LARWQCB FILE NO. I-12074
PRIORITY B2
Attn: Mr. Harry Nguyen


Prepared for:
Atlantic Richfield Company
4 Centerpointe Drive
La Palma, California 90623-1066

January 15, 2005

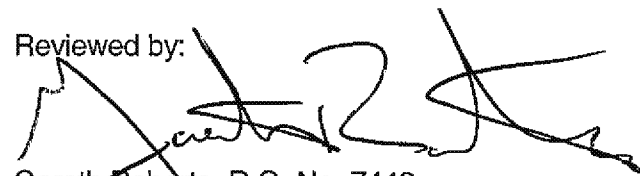
Prepared by:
SECOR International Incorporated
290 Conejo Ridge Avenue, Suite 200
Thousand Oaks, California 91361-4947



Prepared by:


Michael Salisbury
Staff Geologist

Reviewed by:


Gareth Roberts, R.G. No. 7442
Senior Geologist
Project Manager

**SITE CONCEPTUAL MODEL UPDATE
ARCO STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CALIFORNIA**

TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 SITE INFORMATION	1
2.1 SITE LOCATION AND DESCRIPTION	1
2.2 RECORD FEE TITLE HOLDER INFORMATION	2
2.3 PREVIOUS SITE INVESTIGATIONS	2
3.0 MUNICIPAL WELL RECEPTOR SURVEY	6
4.0 GEOLOGY AND HYDROGEOLOGY	6
4.1 REGIONAL GEOLOGY AND HYDROGEOLOGY	6
4.2 SITE GEOLOGY AND HYDROGEOLOGY	7
5.0 HYDROCARBON-IMPACTED SOIL AND GROUNDWATER	7
5.1 HYDROCARBON-IMPACTED SOIL	7
5.2 HYDROCARBON-IMPACTED GROUNDWATER	8
5.2.1 Fourth Quarter 2004 Groundwater Sampling Event	8
5.2.2 Dissolved-Phase Hydrocarbon Plume	9
6.0 REMEDIATION ACTIVITIES	10
6.1 ENHANCED FLUID RECOVERY	10
6.2 SOURCE REMOVAL AND EXCAVATION	10
6.3 AS/SVE REMEDIAL SYSTEM OPERATION	11
6.3.1 Remedial System Installation and Startup	11
6.3.2 Current Operational Status	11
7.0 PLUME TRAVEL TIME DETERMINATION	12
8.0 STANDARD LIMITATIONS	12
9.0 REFERENCES	13

**SITE CONCEPTUAL MODEL UPDATE
ARCO STATION NO. 5110**

TABLE OF CONTENTS (continued)

LIST OF FIGURES

Figure 1	Site Location Map Showing Identified Wells Within a One-Mile Radius
Figure 2	Site Vicinity Map
Figure 3	Site Map Showing Soil Boring and Remedial Well Locations
Figure 4	Site Map Showing New UST, Shoring Boring, and Soil Stockpile Locations
Figure 5	Site Map Showing Former UST, Product Piping, and Dispenser Sample Locations
Figure 6	Site Map Showing Hydrocarbon Concentrations in Soil
Figure 7	Site Map Showing Cross-Section Index
Figure 8	Cross-Section A-A'
Figure 9	Cross-Section B-B'
Figure 10	Groundwater Contour and Hydrocarbon Concentration Map
Figure 11	GRO Concentrations in Groundwater
Figure 12	Benzene Concentrations in Groundwater
Figure 13	MTBE Concentrations in Groundwater
Figure 14	TBA Concentrations in Groundwater
Figure 15	Remedial Well and Piping Locations with Theoretical Radius of Influence for SVE
Figure 16	Cumulative Pounds of Gasoline Range Organics Removed

LIST OF TABLES

Table 1	Historical Soil Analytical Results
Table 2	Summary of Groundwater Analytical & Elevation Data
Table 3	Well Construction Details
Table 4	Summary of Wells Identified Within a One-Mile Radius
Table 5	Summary of Monthly EFR Events (Discontinued)
Table 6	SVE Operation Report
Table 7	Summary of SVE Operation Data
Table 8	Summary of Process Vapor Sampling Results
Table 9	Summary of Individual Well Vapor Sample Analytical Results
Table 10	Individual Soil Vapor Extraction Well Field Monitoring Data
Table 11	Individual Air Sparge Well Monitoring Data
Table 12a, b, and c	Daily Operation Logs

**SITE CONCEPTUAL MODEL UPDATE
ARCO STATION NO. 5110**

TABLE OF CONTENTS (continued)

LIST OF GRAPHS

Graph 1	MW-A1 Hydrograph
Graph 2	MW-A2 Hydrograph
Graph 3	MW-A3 Hydrograph
Graph 4	MW-A4 Hydrograph
Graph 5	MW-A5 Hydrograph
Graph 6	MW-A6 Hydrograph
Graph 7	MW-A7 Hydrograph
Graph 8	D-1 Hydrograph
Graph 9	MW-19 Hydrograph
Graph 10	MW-20 Hydrograph

LIST OF APPENDICES

Appendix A	LARWQCB Correspondence
Appendix B	Historical Figures
Appendix C	Groundwater Sampling Field Data Sheets
Appendix D	Laboratory Analytical Reports and Chain-of-Custody Documentation
Appendix E	Waste Disposal Documentation
Appendix F	Plume Travel Time Update

1.0 INTRODUCTION

SECOR International Incorporated (SECOR), on behalf of the Atlantic Richfield Company (Atlantic Richfield), presents this *Site Conceptual Model Update (SCMU)* for ARCO Station No. 5110 (Site) located at 5731 Firestone Boulevard, in South Gate, California (Figures 1 and 2). This report was prepared in response to the Los Angeles Regional Water Quality Control Board (LARWQCB) letters dated February 28, 2003 and August 27, 2003, titled *Implementation of Final Draft Guidelines for the Investigation and Cleanup of MTBE and Other Oxygenates* (Appendix A). The LARWQCB assigned the Site an investigation and cleanup priority of B2.

The previous SCMU has been updated to include the following phases of work completed during the Fourth Quarter 2004:

- Fourth Quarter 2004 groundwater monitoring and sampling results; and
- Fourth Quarter 2004 remedial system operation and maintenance.

SECOR has prepared this report to present a detailed written and graphical description of the Site characteristics and known distribution of petroleum hydrocarbon constituents in soil and groundwater beneath the Site. The SCMU is based on currently available information.

2.0 SITE INFORMATION

2.1 SITE LOCATION AND DESCRIPTION

ARCO Station No. 5110 is an operating retail gasoline station and mini-mart located at the northwest corner of Firestone Boulevard and Garfield Avenue in South Gate, California. The Site is located at an elevation of approximately 107 feet above mean sea level (msl). Local topography slopes to the south-southwest at approximately 0.017 feet per foot (USGS, 1964). The Los Angeles River is located approximately 2,000 feet west of the Site. The Site currently maintains one 20,000-gallon, and one split 24,000-gallon (two 12,000-gallon chambers), Xerxes double-walled fiberglass underground storage tanks (USTs), and four fuel dispenser islands containing a total of eight fuel dispensers. All product piping consists of double-contained fiberglass product lines. All dispensers are equipped with under-dispenser containment sumps. A drive-through carwash facility and associated clarifier are located at the northwestern perimeter of the Site.

The ARCO Vinvale Terminal is located approximately 500 feet north of ARCO Station No. 5110 (Figure 2). The Vinvale Terminal covers an area of approximately 35 acres and currently is used for the storage and on-loading of gasoline and diesel fuel products for Atlantic Richfield retail outlets in the Los Angeles metropolitan area.

2.2 RECORD FEE TITLE HOLDER INFORMATION

Based on historical groundwater analytical data, the following adjacent properties may potentially be impacted by releases originating from ARCO Station No. 5110 (Property Grant Deed's were provided in the Second Quarter 2003 SCMU).

- ARCO Station #5110
Property Address: 5731 East Firestone Boulevard, South Gate, California
Assessor's Parcel Number: 6232-002-004
Owner: Atlantic Richfield Company
Mailing Address: 4 Centerpointe Drive, La Palma, California 90623
Source: Atlantic Richfield files
- McDonald's Restaurant
Property Address: 5700 Firestone Boulevard, South Gate, California, located south of the Site, across Firestone Boulevard.
Assessor's Parcel Number: 6232-009-003
Owner: Nevada Investment Holdings, Inc.
Mailing Address: 220 Congress Park Drive, Suite 230, Delray Beach, Florida 33445
Source: Los Angeles County Recorder & Los Angeles County Assessor's Office
- Gonzales Chrysler-Plymouth Car Dealership
Property Address: 5820 Firestone Boulevard, South Gate, California, located southeast of the Site, across Firestone Boulevard
Assessor's Parcel Number: 6232-007-021 and 6232-007-022 (formerly known as 6232-007-009 and 6232-007-010)
Owner: Silvestre Gonzales
Mailing Address: 9500 Rayo Avenue, South Gate, California 90280
Source: Los Angeles County Recorder & Los Angeles County Assessor's Office
- Denny's Restaurant
Property Address: 5811 Firestone Boulevard, South Gate, California, located east of the Site, across Garfield Avenue
Assessor's Parcel Number: 6232-004-016
Owner: Prime Cut Grill South Gate Inc.
Mailing Address: 5811 Firestone Boulevard, South Gate, California
Source: KnowX LLC (Real Estate Records Research Company)

2.3 PREVIOUS SITE INVESTIGATIONS

This section presents a summary of historical assessment investigation activities that have been completed at the Site to date. Site maps showing historical soil boring/remedial well locations and historical UST, dispenser, and product line sample locations are included as Figures 3 through 5. A Site map showing hydrocarbon concentrations in soil is included as Figure 6. Historical soil analytical results are summarized in Table 1. Historical groundwater analytical and elevation data are summarized in Table 2. Well construction details are summarized in Table 3.

In September and October 1989, James M. Montgomery Consulting Engineers, Inc. (JMM) observed the removal of four steel USTs and completed an initial site investigation consisting of the installation of three soil borings (A-1 through A-3) and two groundwater monitoring wells (MW-19 and MW-20). The soil borings and monitoring wells were completed to depths ranging from 57 to 71 feet below ground surface (bgs). Soil samples collected below the USTs contained a maximum total petroleum hydrocarbon as gasoline (TPHg) concentration of 7,900 milligrams per kilogram (mg/kg, 3B-2'). Soil samples collected from the soil borings and monitoring wells contained a maximum concentration of 16,000 mg/kg TPHg (A-3-25'). Groundwater was encountered at approximately 57 feet bgs. Hydrocarbon impact was reportedly limited to the area in and around the former USTs (JMM, 1990). Historical figures showing the UST soil sample locations are included in Appendix B.

In June 1990, JMM installed one nested soil vapor extraction (SVE)/groundwater monitoring well (D-1) and two SVE wells (D-2 and D-3). Soil samples contained TPHg concentrations ranging from below laboratory detection limits to 8,600 mg/kg (JMM, 1990). Groundwater samples contained TPHg concentrations ranging from 400 (MW-19) to 1,600 (D-1) micrograms per liter ($\mu\text{g/L}$), and benzene concentrations ranging from 10.2 $\mu\text{g/L}$ (MW-20) to 800 $\mu\text{g/L}$ (D-1).

In March 1991, W.W. Irwin conducted a SVE test to evaluate SVE as a viable remedial alternative (W.W. Irwin, 1991). The radius of influence was determined to range from 76 to 100 feet. Vapor-phase TPHg concentrations ranged from 6,600 to 43,000 parts per million by volume (ppmv). Complete details and results of the SVE pilot test are presented in W.W. Irwin's *Report on Venting Test* dated March 27, 1991.

In December 1992, JMM completed four additional soil borings (D-4 through D-7) to a depth of approximately 50 feet bgs (JMM, 1993). TPHg was not detected above the laboratory detection limits (<10 mg/kg). Detectable benzene concentrations ranged from 0.005 mg/kg (D-6-10') to 0.33 mg/kg (D-4-50').

On April 5 and 6, 1994, Pacific Environmental Group, Inc. (PEG) installed one dual nested SVE well (VEW-1) and three triple-nested SVE wells (VEW-2 through VEW-4) to a depth of 60 feet bgs (PEG, 1995). Detectable TPHg concentrations ranged from 1.4 mg/kg (VEW-4-50') to 6,300 mg/kg (VEW-3-30'). Detectable benzene concentrations ranged from 0.006 mg/kg (VEW-1-30') to 60 mg/kg (VEW-2-25').

Prior to January 30, 1998, PEG installed two off-Site groundwater monitoring wells (MW-A1 and MW-A2) at the Site. MW-A1 was completed in the southbound lane of Garfield Avenue. MW-A2 was completed in the eastbound lane of Firestone Boulevard. A technical report detailing the installation of these wells was not available.

On December 1, 1999, SECOR completed two additional on-Site monitoring wells (MW-A3 and MW-A4). Wells MW-A3 and MW-A4 were completed at the southeast and northwest corners of the Site, respectively, and screened from approximately 35 to 65 feet bgs. A detectable level of TPHg was identified in one soil sample at a concentration of 1.8 mg/kg (MW-A3-40'). Detectable benzene concentrations ranged from 0.0028 mg/kg (MW-A3-55') to 0.21 mg/kg (MW-A3-40'). Methyl-tertiary-butyl ether (MTBE) concentrations were identified in one soil sample at a concentration of 0.037 mg/kg (MW-A3-40'; SECOR, 2000).

On October 21 and 30, 2001, SECOR installed two additional off-Site monitoring wells MW-A5 and MW-A6, respectively. Monitoring well MW-A5 was installed in the eastbound lane of Firestone Boulevard, south of the Site. Monitoring well MW-A6 was installed in the sidewalk of the northbound lane of Garfield Avenue, east of the Site. Groundwater monitoring wells MW-A5 and MW-A6 were completed to a total depth of approximately 65 feet bgs. The well casings were constructed of four-inch diameter Schedule 40 PVC, and were screened (0.020-inch slot) from approximately 30 to 65 feet bgs (SECOR, 2001).

On January 24 and 25, 2002, SECOR over-drilled and abandoned four SVE wells (VEW-1, VEW-3, VEW-4, and D-2), and one groundwater monitoring well (D-1). The wells were abandoned to accommodate scheduled demolition/renovation activities including removal and replacement of the USTs and re-location of the station building (SECOR, 2002a).

From January through March, 2002, the Site was completely demolished and re-constructed. Demolition activities included removal of four 10,000-gallon, double-walled fiberglass USTs, all product dispensers, all associated subsurface product piping, dispenser island canopy, a clarifier associated with the former carwash, and demolition of the former station building. Renovation activities included installation of new USTs at the southern perimeter of the Site, new dispenser islands, new subsurface product and electrical piping, a new dispenser island canopy, new station building and carwash. A total of 27 soil samples were collected from beneath the USTs, clarifier, dispensers, and product lines and from the bottom of the new tankpit. Detectable concentrations of adsorbed-phase petroleum hydrocarbons were identified in 18 of the 27 submitted samples. The highest concentrations of adsorbed-phase hydrocarbons were detected in samples collected beneath the USTs (SECOR, 2002b). The maximum hydrocarbon concentrations were as follows: TPHg – 8,800 mg/kg (TK-4A-17); benzene – 16 mg/kg (TK-4A-17); MTBE – 8.1 mg/kg (TK-1B-17); and tertiary butanol (TBA) – 24 mg/kg (TK-4B-17). A total of approximately 2,115 tons of hydrocarbon-impacted soil was generated during the UST removal activities and transported to TPS Technologies, in Adelanto, California for disposal/recycling.

On February 14, 2002, one 20,000-gallon, and one split 24,000-gallon (two 12,000-gallon chambers), Xerxes double-walled fiberglass USTs were installed in a new tankpit located at the southern end of the Site. New double-contained fiberglass product piping was installed from the USTs to four new dispenser islands, and under-dispenser containment sumps were installed below the new dispensers. A new clarifier was installed on-Site for use with the new on-Site car wash facility. Prior to installation of the new USTs, four baseline soil samples (NTK-1A-18', NTK-1B-18', NTK-2A-18', and NTK-2B-18') were collected from the bottom of the new tankpit excavation (SECOR, 2002b).

In March 2002, SECOR supervised the trenching and installation of approximately 400 feet of subsurface remedial conveyance piping at the Site. The remedial piping was installed to implement possible future SVE activities at the Site. Subsurface piping was constructed using one inch (AS), two inch (SVE), and six inch diameter PVC lines and was extended to existing vapor extraction wells D-3 and VEW-2, and to 18-inch diameter well boxes installed in strategic locations to accommodate possible future remedial well installation at the Site.

On April 16, 2002, SECOR advanced one soil boring within the former UST basin and converted it to a dual-nested groundwater monitoring/SVE well (MW-A7), to replace abandoned groundwater monitoring well D-1 (SECOR, 2002a). MW-A7 was constructed using two-inch (SVE) and four-inch (groundwater monitoring) diameter PVC casing screened (0.020-inch slot) from approximately

ten to 30 feet bgs and 35 to 60 feet bgs, respectively. A total of 12 soil samples were collected and analyzed. Detectable concentrations of petroleum hydrocarbon constituents were identified in all 12 samples. Maximum petroleum hydrocarbon concentrations were identified as follows: TPHg – 1,400 mg/kg (MW-A7-30); benzene – 1.5 mg/kg (MW-A7-25); MTBE – 7.7 mg/kg (MW-A7-20); and TBA – 16 mg/kg (MW-A7-20).

In a letter dated February 28, 2003, entitled *Implementation of Final Draft Guidelines for the Investigation and Cleanup of MTBE and Other Oxygenates*, the LARWQCB assigned the Site a cleanup priority of B2 (issued to all sites greater than 1,000 feet and less than 3,000 feet from a receptor, with or without MTBE/oxygenates detection: Appendix A).

SECOR submitted a Remedial Action Plan (RAP) dated June 25, 2003, in which SECOR proposed the installation of an air sparge (AS)/soil vapor extraction (SVE) system. In the RAP, SECOR proposed using existing SVE wells VEW-2 and D-3, monitoring well MW-A7, and installing five AS/SVE wells to implement the proposed AS/SVE remedial system.

In a letter dated August 27, 2003, the LARWQCB approved the installation of the five proposed AS/SVE wells and installation of the proposed remedial AS/SVE system (Appendix A).

From September 29 through October 4, 2003, SECOR installed five triple nested AS/SVE wells (AS/SVE-1 through AS/SVE-5). A total of 70 soil samples were collected and analyzed from soil borings AS/SVE-1 through AS/SVE-5. The maximum concentrations of adsorbed-phase hydrocarbons were identified as follows: TPHg – 6,700 mg/kg (AS/SVE-2-45), benzene – 12 mg/kg (AS/SVE-2-45), and MTBE – 11 mg/kg (AS/SVE-2-30). AS wells were completed using 1-inch diameter Schedule 80 PVC with a 2-foot stainless steel air sparge point set to depths ranging from approximately 60 to 68 feet bgs. The nested SVE wells were completed using Schedule 40 PVC with 0.020 slotted screen intervals extending from approximately 7 to 27 and 35 to 55 feet bgs.

Two soil samples were submitted from soil boring AS/SVE-2 (AS/SVE-2-58 and AS/SVE-2-65) for physical property data analysis to determine soil classification, particle size and distribution, and hydraulic conductivity (K). Sample AS/SVE-2-58 and AS/SVE-2-65 are silty sands representative of the aquifer material with vertical K values of 1.51×10^{-4} and 4.42×10^{-5} centimeters per second (cm/s), respectively. A value of 10^{-6} is the approximate K value for clay and is considered the standard for a competent confining layer. Laboratory physical property data were included in SECOR's Fourth Quarter 2003 Site Conceptual Model Update Report, dated January 15, 2004.

Quarterly groundwater monitoring and sampling has been conducted at the Site since June 1993.

3.0 MUNICIPAL WELL RECEPTOR SURVEY

SECOR researched the location of potential municipal/public supply wells using the following sources: 1) Geographic Environmental Information Management System (GEIMS) database via the Geotracker website (www.geotracker.swrcb.ca.gov); 2) Los Angeles Department of Water Resources (LADWR) Watermaster website (www.dpla.water.ca.gov/sd/groundwater/wells); 3) Los Angeles Department of Public Works (LADPW) website (www.ladpw.org); 4) Water Replenishment District of Southern California (WRD), 5) City of Southgate, 6) and Environmental Data Resources, Inc. (EDR) website (www.edrnet.com). A total of 18 wells were identified within a one-mile radius of the Site. A summary of the available well information is summarized in Table 4. A Site map showing wells identified within a one-mile radius is included as Figure 1.

- The closest identified wells that are known to be actively used for municipal supply are the City of South Gate Wells 02S/12W-31Q03 (SG-24) and 02S/12W-31Q02 (SG-25). These wells are located approximately 1,800 feet southwest of the Site in a clustered area east of the Los Angeles River and west of the Long Beach Freeway.

4.0 GEOLOGY AND HYDROGEOLOGY

4.1 REGIONAL GEOLOGY AND HYDROGEOLOGY

ARCO Station 5110 is located on the floodplain between the Los Angeles River and the Rio Hondo River. The Site is located within the Central Block physiographic province of the Los Angeles Basin (Yerkes, et al., 1965). The Central Block is a 55-mile long, wedge-shaped block oriented in a northwest-southeast direction in the middle portion of the Los Angeles Basin. It is bounded on the southwest by the northwest-trending Newport-Inglewood Uplift structural zone, on the northeast by the Whittier Fault and the Elysian-Repetto-Coyote Hills sequence, on the southeast by the Santa Ana Mountains and on the northwest by the Santa Monica Mountains (California Department of Water Resources, or CDWR, 1961).

The Site is underlain by approximately 20 feet of Holocene alluvial deposits consisting primarily of silt, clay, and discontinuous lenses of sand. These sediments represent river system deposits derived from the ancestral Los Angeles and Rio Hondo Rivers. The Upper Pleistocene Lakewood Formation extends from approximately 20 to 275 feet bgs. The upper part of the Lakewood Formation consists predominantly of fine-grained silt and clay. The lower portion of the Lakewood Formation contains greater percentages of sand with some gravel lenses. The Lower Pleistocene San Pedro Formation extends from a depth of approximately 275 to 1,200 feet bgs, and consists of marine and continental gravel, sand, sandy silt, silt and clay (PEG, 1998).

The Site is located within the Central Basin Pressure Area of the Central Groundwater basin of the Los Angeles Coastal Plain. The two main formations in this area, Lakewood and San Pedro, contain a series of distinct water-bearing zones that are separated by less-permeable zones or aquiclude. The Lakewood Formation is composed of four hydrostratigraphic zones: the Bellflower Aquiclude, the Exposition Aquifer, an unnamed aquiclude, and the Gage Aquifer. In the Site vicinity, the Bellflower Aquiclude extends from approximately 20 to 85 feet bgs. The underlying Exposition Aquifer can be divided into a middle hydrostratigraphic zone extending from

approximately 85 to 210 feet bgs, and a deep hydrostratigraphic zone extending from approximately 210 to 275 feet bgs.

Locally, the Bellflower Aquiclude contains a relatively high percentage of sand and functions as an unconfined to semi-confined aquifer instead of a confining layer. This is the case at ARCO Station 5110 where groundwater is encountered within the Bellflower Aquiclude at depths ranging from approximately 40 to 57 feet bgs.

4.2 SITE GEOLOGY AND HYDROGEOLOGY

The subsurface lithology beneath the Site comprises five primary lithologic horizons: 1) interbedded sand, silty sand, silt, and thinly bedded clay from approximately near surface grade to 30 feet bgs; 2) sand from approximately 30 to 45 feet bgs; 3) thinly bedded clay, silt, and silty sand from approximately 45 to 55 feet bgs; 4) sand from approximately 55 to 65 feet bgs; and 5) silt and silty sand from approximately 65 to 70 feet bgs (maximum depth explored). A Site map with cross-sectional index lines is included as Figure 7. Generalized cross sections A-A' and B-B' depict the subsurface lithology and are included as Figures 8 and 9, respectively. Historical soil boring logs were provided in the Fourth Quarter 2003 SCMU.

Depth to groundwater in the on-Site wells has ranged from a low of 57.21 feet bgs in June 1990 (MW-19) to a high of 39.61 feet bgs in December 1999 (MW-19). Groundwater levels across the Site rose steadily from June 1990 through approximately the end of 1999 (approximately 13 feet), and then began dropping and have continued to drop (approximately 9 feet) through the Fourth Quarter 2004.

5.0 HYDROCARBON-IMPACTED SOIL AND GROUNDWATER

5.1 HYDROCARBON-IMPACTED SOIL

Based on analytical data collected from UST removal and replacement operations and numerous assessment activities, the highest concentrations of adsorbed-phase hydrocarbons were identified beneath the former USTs, and at the eastern end of the former central dispenser island. Soil samples collected beneath the USTs in February 2002, contained TPHg concentrations up to 8,800 mg/kg (TK-4A-17), benzene concentrations up to 16 mg/kg (TK-4A-17), and MTBE concentrations up to 8.1 mg/kg (TK-1B-17). Soil samples collected from borings installed within and peripheral to the former USTs indicated that elevated concentrations of TPHg and benzene, toluene, ethylbenzene, and total xylenes (BTEX) extend from approximately ten feet bgs to 60 feet bgs in the area of the former USTs. Analytical data from recent soil borings installed within the area of the former USTs (MW-A7, AS/SVE-1 and AS/SVE-2) indicated that elevated concentrations of MTBE (11 mg/kg; AS/SVE-2-30) and TBA (16 mg/kg; MW-A7-20) were identified within the upper 20 feet of the soil column, with lower concentrations of MTBE and TBA extending to approximately 65 feet bgs. Analytical data indicates that the former USTs are the primary source area for adsorbed-phase hydrocarbon contamination at the Site. The lateral extent of the adsorbed-phase hydrocarbon plume in the vicinity of the former USTs appears to be defined to the west by VEW-1, to the north by D-6, to the east by D-4, and to the south by D-3. A site map showing hydrocarbon concentrations in soil is included as Figure 6. Historical soil analytical results are summarized in Table 1.

During Site demolition and renovation activities conducted in February 2002, soil samples collected beneath the eastern end of the central dispenser island indicated elevated concentrations of TPHg (3,500 mg/kg; D-6-2) and total xylenes (360 mg/kg; D-6-2). Additionally, soil excavated from the eastern end of the new tankpit at the southern end of the Site was stained dark gray and contained hydrocarbon odors. Soil samples collected from shoring soil boring SB-5, installed along the northeast perimeter of the new tankpit, contained TPHg concentrations up to 1,200 mg/kg (SB-5-5). Soil samples collected from the base of the new tankpit contained MTBE concentrations of up to 0.59 mg/kg (NTK-1B-18). Recent soil borings AS/SVE-4 and AS/SVE-3 identified elevated concentrations of TPHg (3,100 mg/kg; AS/SVE-4-15) and benzene (2.6 mg/kg; AS/SVE-4-30) within the upper 30 feet of the soil column. It appears that the former central dispenser island was an additional source area for adsorbed-phase hydrocarbon contamination. The lateral extent of the adsorbed-phase hydrocarbon plume in this area is predominantly defined to the east by MW-A3, and to the west by AS/SVE-5.

Low-level concentrations of adsorbed-phase hydrocarbons have been identified from 40 to 65 feet bgs, within the capillary fringe and saturated zones, in nearly all borings installed on-and off-Site. Fluctuating groundwater elevations (which have fluctuated as much as 17 feet in MW-19) have likely smeared and transported adsorbed-phase petroleum hydrocarbons across the Site within the capillary fringe.

5.2 HYDROCARBON-IMPACTED GROUNDWATER

5.2.1 Fourth Quarter 2004 Groundwater Sampling Event

On November 16, 2004, SECOR conducted the Fourth Quarter 2004 Groundwater Monitoring and Sampling event at the Site. A total of nine groundwater monitoring wells (MW-19, MW-20, and MW-A1 through MW-A7) were gauged and sampled. Depth to groundwater in the on- and off-Site groundwater monitoring wells ranged from 50.81 to 53.63 feet bgs. The groundwater flow direction was to the south-southeast at a gradient of approximately 0.004 feet per foot.

All groundwater samples were relinquished to Del Mar Analytical of Irvine, California (Del Mar) for chemical analysis. SECOR and Del Mar adhered to strict chain-of-custody procedures from sample collection to sample analysis. All groundwater samples were analyzed for the following analytes and in accordance with the appropriate Environmental Protection Agency (EPA) method:

- Gasoline range organics C₄-C₁₂ (GRO) by EPA Method 8015B; and
- BTEX, di-isopropyl ether (DIPE), ethyl-tertiary-butyl ether (ETBE), tertiary-amyl-methyl ether (TAME), TBA, MTBE, and ethanol by EPA Method 8260B.

Maximum hydrocarbon concentrations were identified as follows: GRO – 24,000 µg/L, (MW-A4); benzene – 7,400 µg/L (MW-A4), MTBE – 570 µg/L (MW-A3), and TBA - 790 µg/L (MW-A5). Concentrations qualified by a "J flag" are estimated values detected at a level below the reporting limit (RL) and above the laboratory method detection limit (MDL). EPA-certified labs therefore advise that the user of this data should be aware that this data is of unknown quality.

Groundwater analytical and elevation data are summarized in Table 2. A groundwater elevation and hydrocarbon concentration map is included as Figure 10. Isoconcentration maps depicting the lateral extent of GRO, benzene, MTBE, and TBA in groundwater are included as Figures 11

through 14, respectively. Hydrographs depicting GRO, benzene, MTBE and TBA concentrations observed in groundwater monitoring wells over time are included as Graphs 1 through 10.

Groundwater sampling field data sheets are provided in Appendix C. Laboratory analytical reports and chain-of-custody documentation are provided in Appendix D. Waste disposal documentation is provided in Appendix E.

5.2.2 Dissolved-Phase Hydrocarbon Plume

The ARCO Vinvale Terminal is located approximately 500 feet north of ARCO Station No. 5110 (Figure 2). The Vinvale Terminal covers an area of approximately 35 acres and currently is used for the storage and on-loading of gasoline and diesel fuel products for ARCO retail outlets in the Los Angeles metropolitan area. The Vinvale Terminal maintains ten aboveground storage tanks (ASTs) for various grades of refined products and one slop oil AST. The total tank working capacity is approximately 34 million gallons. A multi-bay fuel loading rack is located in the southwestern portion of the Vinvale Terminal.

Based on the historical quarterly groundwater analytical results, it appears that dissolved-phase GRO and BTEX components are migrating southward from the ARCO Vinvale Terminal to ARCO Station No. 5110, resulting in commingling of the groundwater plume on the northern portion of the station property. This is evidenced by historically elevated concentrations of GRO and BTEX in monitoring wells MW-A4 and MW-19, which are located north and northeast (up-gradient) of the former and existing USTs and associated dispensers and product lines at the Site. The highest historical concentrations of GRO (52,000 µg/L on March 21, 2000) and benzene (9,300 µg/L on August 23, 2000) were identified in MW-19. Both MW-A4 and MW-19 have historically had non detectable to very low concentrations of fuel oxygenates, suggesting that the dissolved-phase plume at the northern portion of the Site represents a commingling of plumes with the Vinvale Terminal. Wells MW-A7, MW-A3, and MW-20 contain elevated concentrations of TPHg, BTEX, and fuel oxygenates, and appear to indicate contamination associated with operation of the former USTs and dispensers at the Site, which distributed the fuel additive MTBE.

MTBE was first analyzed for and detected at the Site in July 1996. The highest concentrations of MTBE have historically been detected in former monitoring well D-1 (abandoned January 24, 2002), located immediately north of the former USTs. The highest historical MTBE concentration of 11,000 µg/L was detected in D-1 in December 1999. Currently the highest concentrations of MTBE are located in MW-A4. The maximum TBA concentration was reported in well MW-A7 on June 6, 2002, at a concentration of 1,200 µg/L. Elevated concentrations of fuel oxygenates, primarily MTBE and TBA, have historically been limited to the on-Site wells. However, during the Fourth Quarter 2003, off-Site down-gradient well MW-A2 began indicating increasing concentrations of GRO and benzene, and MW-A5 is indicating increasing concentrations of GRO, benzene, MTBE, and TBA.

6.0 REMEDIATION ACTIVITIES

6.1 Enhanced Fluid Recovery

From July 1999 through January 2002, enhanced fluid recovery (EFR) was performed approximately monthly with a vacuum truck as an interim remedial action due to elevated concentrations of MTBE identified in D-1. EFR was also performed briefly at wells MW-20, MW-A5, and MW-A6. During the EFR activities, a total of approximately 17,391 gallons of hydrocarbon-impacted groundwater was removed from the Site. EFR activities were discontinued after D-1 was abandoned in January 2002. A summary of historical EFR events is presented in Table 5.

6.2 Source Removal and Excavation

The source of the discharge has been removed and replaced. On February 7, 2002, four 10,000-gallon, double-walled fiberglass USTs and their associated subsurface product piping and dispensers were removed from the Site. On February 14, 2002, one 20,000-gallon, and one split 24,000-gallon (two 12,000-gallon chambers), Xerxes double-walled fiberglass USTs were installed at the southern end of the Site. New double-contained fiberglass product piping was installed from the USTs to four new dispenser islands, and under-dispenser containment sumps were installed below the new dispensers. A new clarifier was installed on-Site for use with the new carwash facility.

Extensive excavation and trenching was performed at the Site during installation of the new USTs (new tankpit located at the southern perimeter of the Site), dispensers, subsurface product and electrical piping, and new canopy footings. Additionally, the footprint of the new station building, dispenser islands, and carwash were excavated a minimum of two feet and re-compacted with clean imported soil. During preparation of the former tankpit for backfilling, approximately 200 tons of soil and pea gravel was removed from the bottom of the tankpit. Soil excavated from the bottom of the former tankpit emitted volatile organic compounds (VOC) concentrations in excess of 1,000 ppmv as measured in the field with a hand held photo-ionization detector (PID).

A new tankpit was excavated at the southern end of the Site. Soil excavated at the northeastern corner of the new tankpit was visibly stained (grayish) and impacted with petroleum hydrocarbons, likely associated with the former dispensers. The new tankpit was excavated to a total depth of approximately 18 feet bgs. Soil encountered from 15 to 18 feet bgs was stained a greenish color, and emitted VOC concentrations above 50 ppmv. Due to the encountered hydrocarbon contamination, the majority of soil generated from the new tankpit excavation was hauled off Site for disposal. A total of approximately 1,500 tons of soil were excavated from the new tankpit, of which approximately 500 tons, primarily from the upper half of the western end of the tankpit, were re-used on-Site as backfill material for the former tankpit.

During the station renovation activities, a limited remedial over-excavation of hydrocarbon-impacted soil was performed at the eastern end of the former middle dispenser island. A five by five foot wide excavation was completed to a depth of five feet bgs to remove hydrocarbon-impacted soil identified in dispenser sample D-6-2'.

A total of approximately 2,115 tons of petroleum hydrocarbon-impacted soil was removed from the Site during the Site demolition and renovation activities and transported to TPS Technologies Soil Recycling (TPS) in Adelanto, California for disposal/recycling (SECOR, 2002).

6.3 AS/SVE Remedial System Operation

6.3.1 Remedial System Installation and Startup

During the First Quarter 2004, SECOR finalized installation of an AS/SVE remedial system at the Site. The system consists of a Paragon Systems ET-250 oxidizer (currently in thermal mode) connected to six dual-nested SVE wells (SVE-1 through SVE-5, and MW-A7). An Ingersoll-Rand rotary screw air compressor is connected to five AS wells (AS-1 through AS-5). SVE operational summary data is included in Tables 6 and 7.

The SVE system was started on April 7, 2004, and samples were collected from each individual well, and from the influent and effluent vapor stream to the thermal oxidizer. Undiluted vapor analytical results in the process stream at startup were identified as follows: gasoline range organics (GRO; C₄-C₁₂) – 8,400 ppmv, benzene – 92 ppmv, and MTBE - <27 ppmv. Vapor analytical results from the SVE system process stream and from individual wells are summarized in Tables 8 and 9, respectively.

After sampling, the system was shut down. Effluent vapor samples were analyzed on 24-hour turnaround to ensure the system was destroying vapors to within the South Coast Air Quality Management District (SCAQMD) required benzene limit of 0.24 ppmv. Benzene was detected in the effluent stream at 0.19 ppmv, just below the SCAQMD limit.

The SVE system was restarted on April 13, the dilution valve was opened 100%, effluent samples were collected, and the system was shut down. Analytical results were <0.059 ppmv for benzene.

On April 16, the SVE system was started and left to continually operate. Samples were collected weekly for the first month to ensure the oxidizer was capable of destroying hydrocarbon vapors to within the SCAQMD benzene requirement.

6.3.2 Current Operational Status

From system start-up through September 23, 2004 vapors were extracted from the shallow zone intervals of AS/SVE-1, AS/SVE-2, AS/SVE-3, AS/SVE-4, AS-SVE-5, and MW-A7. All wells used for SVE are dual nested. On September 23, 2004, the shallow zone wells were closed and the deeper zone wells were opened due to decreasing hydrocarbon vapor concentrations to the thermal oxidizer. Air sparging has not been initiated due to the high influent concentrations to the thermal oxidizer. Monitoring and enhancement of the SVE system is performed on a weekly basis. Individual SVE well monitoring data collected in the field is summarized in Table 10. Air sparge well data is summarized in Table 11 (AS wells currently not on-line). Daily operational logs are included in Tables 12a, 12b, and 12c.

Vapor samples collected on December 16, 2004 (deep zone wells open) identified GRO, benzene and MTBE concentrations of 1,700 ppmv, 0.98 ppmv, and < 0.4 ppmv, respectively, in the undiluted process stream.

As of December 31, 2004, an estimated total of 37,369 pounds of GRO has been destroyed by vapor extraction (Figure 16). Laboratory analytical reports and chain-of-custody documentation are provided in Appendix D.

7.0 PLUME TRAVEL TIME DETERMINATION

A conservative estimate of the plume travel time was made using BIOSCREEN, a Microsoft Excel spreadsheet analytical model based on the Domenico analytical solute transport model. The nearest receptor identified is Municipal Well No. 02S/12W-31Q02 (SG-25), located approximately 1,800 feet southwest of the Site. The plume travel time estimate was based on the time for MTBE concentrations of 13 µg/L, the primary maximum contaminant level (MCL) of MTBE, to reach the Municipal Well. Based on the Bioscreen model, the most likely scenario was a plume travel time of more than 130.5 years. The Plume Travel Time Determination Report is included in Appendix E.

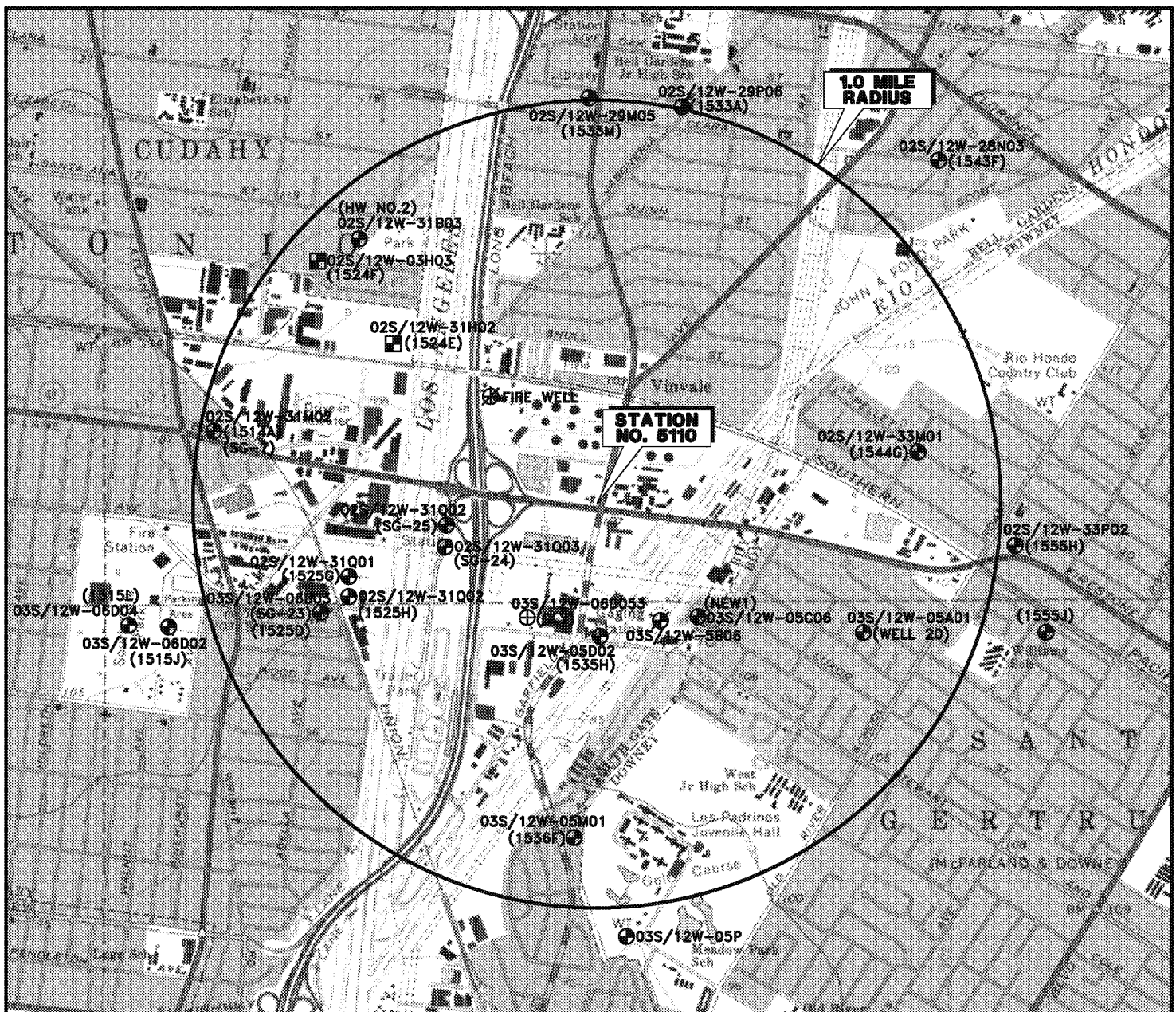
8.0 STANDARD LIMITATIONS

All work was performed under the supervision of a Registered Geologist as defined in the Registered Geologist Act of the California Code of Regulations. The information contained in this report represents our professional opinions, and is based in part on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

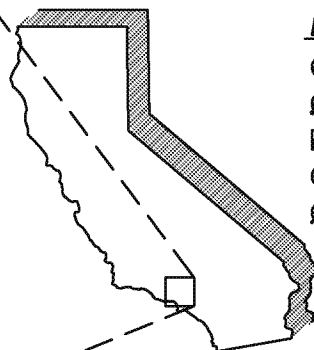
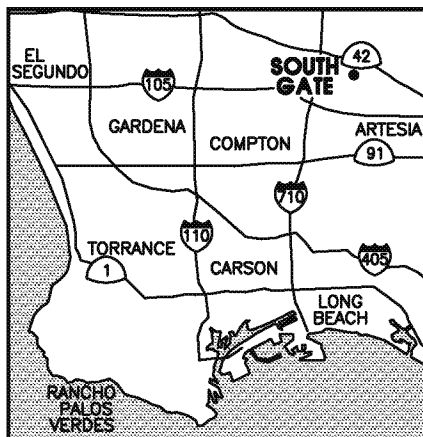
9.0 REFERENCES

- California Department of Water Resources (CDWR), 1961. Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County: Appendix A – Groundwater Geology. CDWR Bulletin 104, 181 p.
- James M. Montgomery Consulting Engineers, Inc. (JMM), 1990. *Preliminary Site Assessment and Environmental Oversight of Tank Removals*, ARCO Station No. 5110, 5731 East Firestone Blvd, South Gate, California, March.
- James M. Montgomery Consulting Engineers, Inc. (JMM), 1990. *Installation of Vapor Extraction Wells and Groundwater Monitoring Well*, ARCO Station No. 5110, 5731 East Firestone Blvd, South Gate, California, December.
- James M. Montgomery Consulting Engineers, Inc. (JMM), 1993. *Site Assessment Report – Vadose Zone Soils*, ARCO Station No. 5110, 5731 East Firestone Blvd, South Gate, California, February 10.
- Pacific Environmental Group, Inc., 1995. *Off-Site Hydropunch™ Groundwater Assessment*, ARCO Vinvale Terminal. August 28.
- Pacific Environmental Group, Inc. (PEG), 1998. *Hydrogeological Characterization and SPH Recovery Enhancement Report*, ARCO Vinvale Terminal, 8601 South Garfield Avenue, South Gate, California, October 2.
- SECOR International Inc. (SECOR), 2000, *Well Installation Report*, ARCO Station No. 5110, 5731 East Firestone Blvd, South Gate, California, January 25.
- SECOR International Inc. (SECOR), 2001, *Additional Monitoring Well Installation Report*, ARCO Station No. 5110, 5731 East Firestone Blvd, South Gate, California, December 4.
- SECOR International Inc. (SECOR), 2002a, *Well Abandonment and Re-Installation Report*, ARCO Station No. 5110, 5731 East Firestone Blvd, South Gate, California, July 2.
- SECOR International Inc. (SECOR), 2002b, *Site Demolition and Renovation Report*, ARCO Station No. 5110, 5731 East Firestone Blvd, South Gate, California, July 9.
- SECOR International Inc. (SECOR), 2003, *Remedial Action Plan*, ARCO Station No. 5110, 5731 East Firestone Blvd, South Gate, California, June 25.
- United States Geological Survey (USGS), 1964, South Gate Quadrangle, 7.5 minute topographic, photo revised 1981.
- W.W. Irwin, Inc. (1991), *Soil Vent Test*, ARCO Station No. 5110, 5731 East Firestone Blvd, South Gate, California, March 27.
- Yerkes, R.F., McCulloh, T.H., Schoellhamer, J.E. and J.G. Vedder, 1965. Geology of the Los Angeles Basin, California – An Introduction. USGS Professional Paper 420-A. United States Government Printing Office, Washington, D.C., pp. A1-A57.

FIGURES

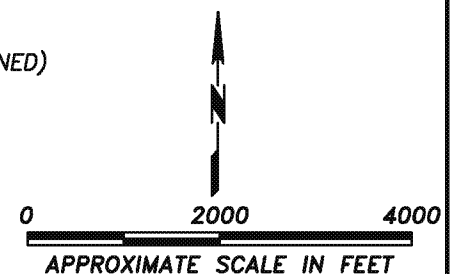


SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, SOUTH GATE QUADRANGLE, 1964
PHOTOREVISED 1981



LEGEND

- ⊕ PUBLIC SUPPLY WELL
- ⊕ PUBLIC SUPPLY WELL (ABANDONED)
- OBSERVATION WELL
- ⊕ WELL
- ⊕ WELL (ABANDONED)



SECOR

290 Conejo Ridge Avenue, Suite 200
Thousand Oaks, CA 91361
(805) 230-1266/230-1277 (Fax)

PREPARED FOR:

ATLANTIC RICHFIELD COMPANY
STATION NO. 5110
5731 East Firestone Boulevard
South Gate, California

JOB NUMBER:

37BP.05110.04.0336

DRAWN BY:

R. Roman

CHECKED BY:

L. Moreno

APPROVED BY:

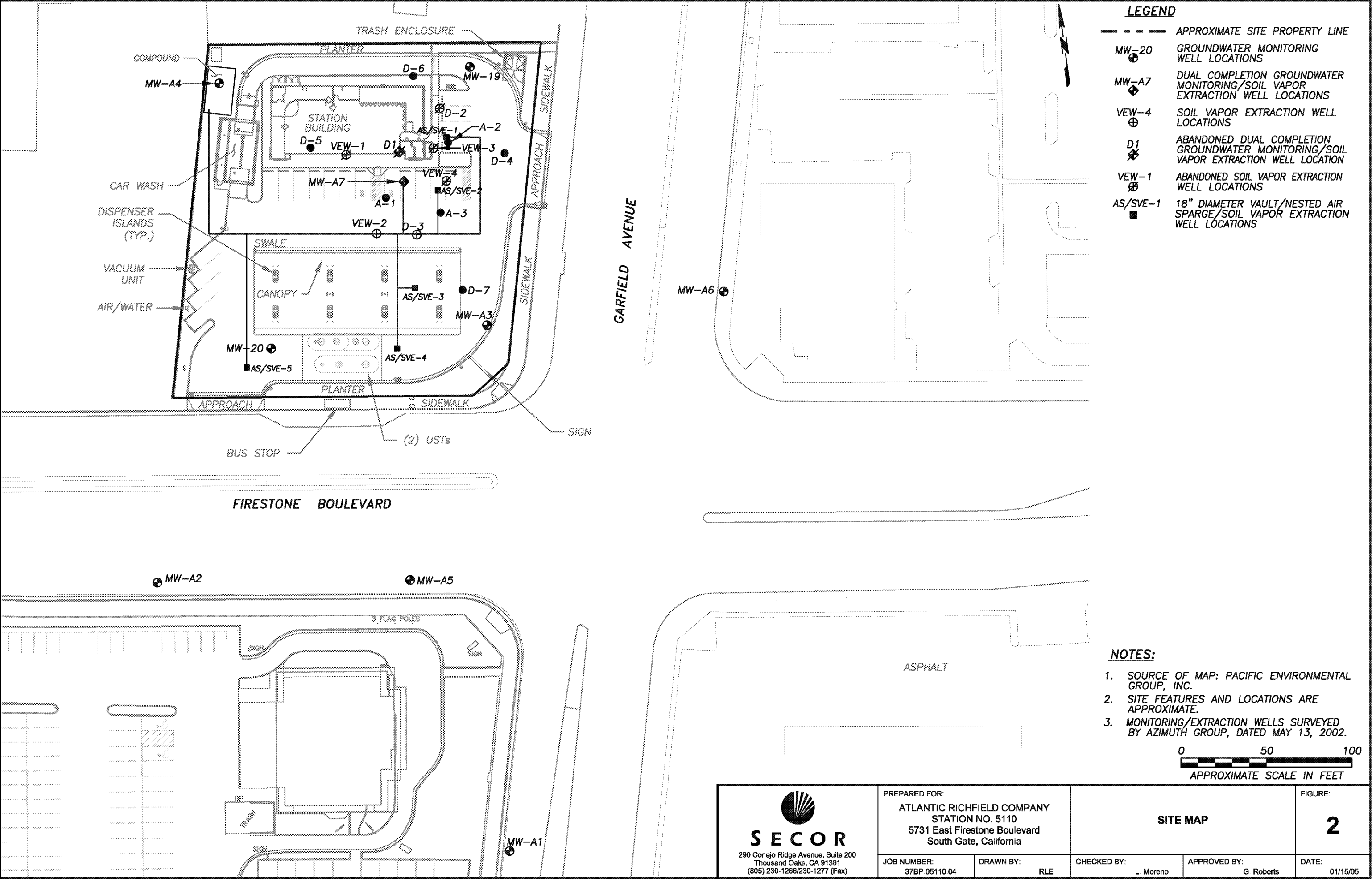
G. Roberts

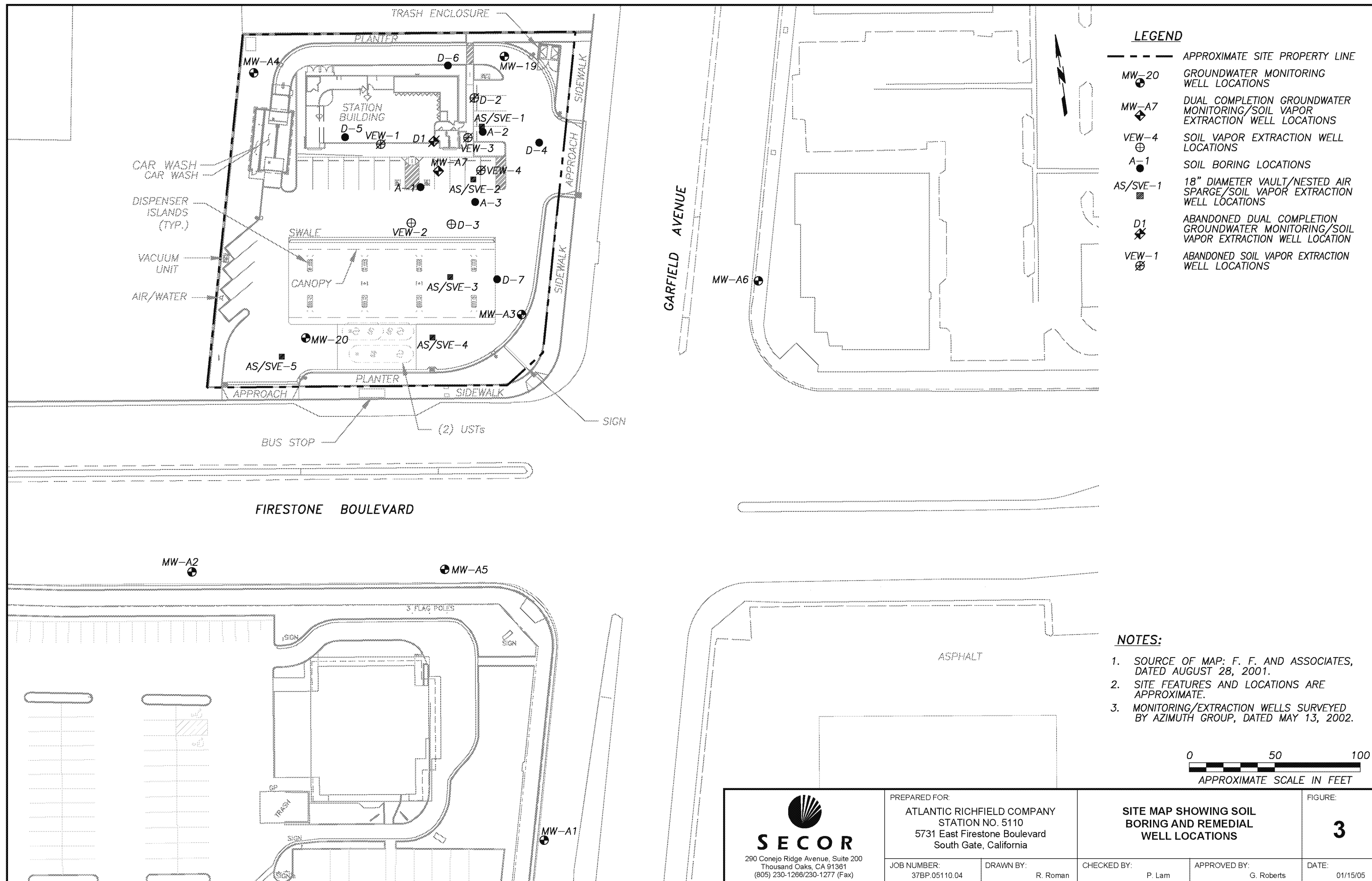
FIGURE:

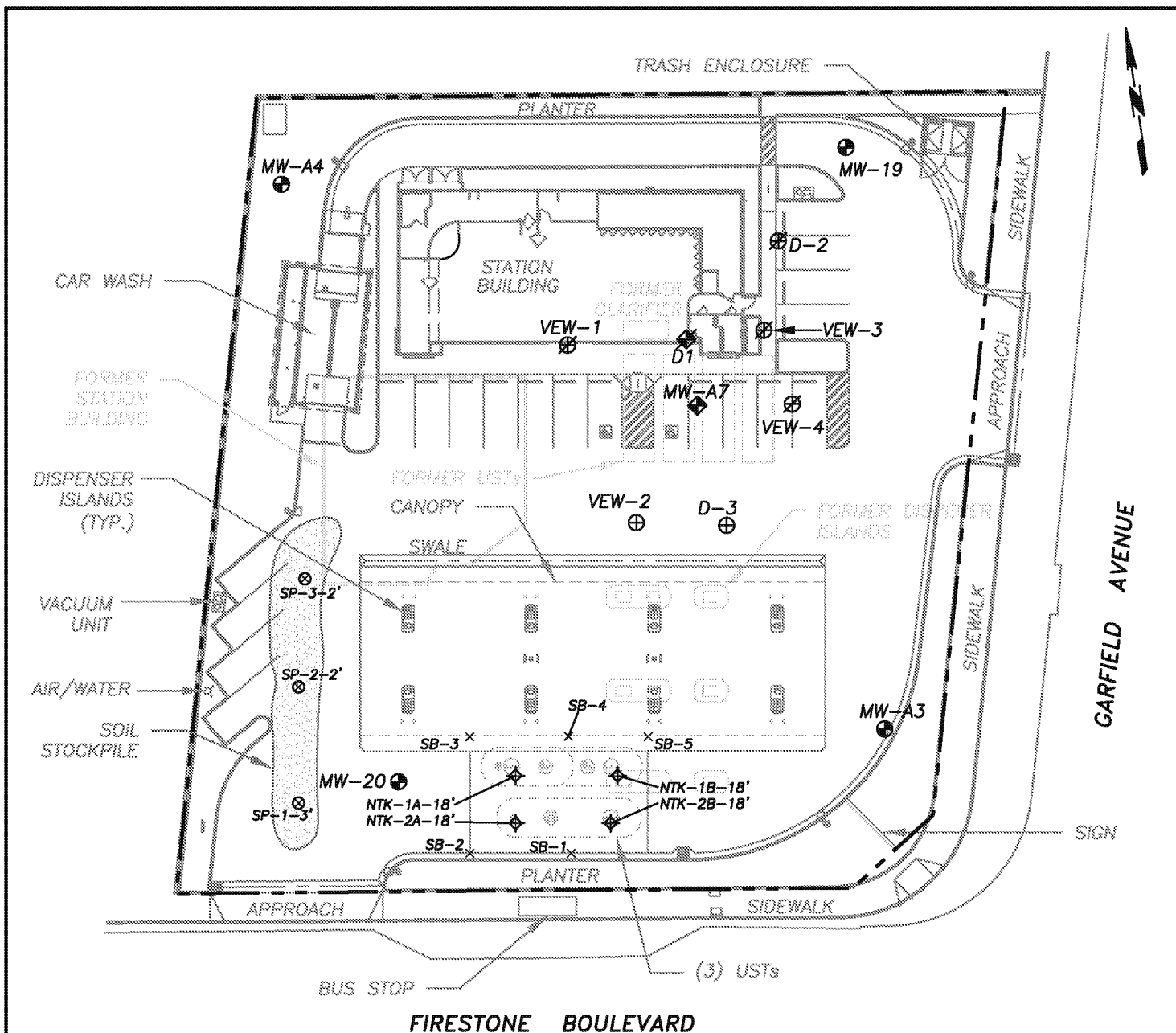
1

DATE:

01/15/05





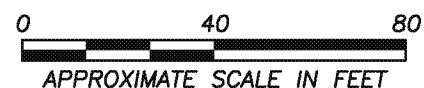


LEGEND

---	APPROXIMATE SITE PROPERTY LINE
MW-20	GROUNDWATER MONITORING WELL LOCATIONS
MW-A7	DUAL COMPLETION GROUNDWATER MONITORING/ SOIL VAPOR EXTRACTION WELL LOCATIONS
VEW-4	SOIL VAPOR EXTRACTION WELL LOCATIONS
D-1	ABANDONED DUAL COMPLETION GROUNDWATER MONITORING/ SOIL VAPOR EXTRACTION WELL LOCATION
VEW-1	ABANDONED SOIL VAPOR EXTRACTION WELL LOCATIONS
NTK-1A-18'	NEW UST ENCLOSURE SAMPLE LOCATIONS
SB-1	SHORING SAMPLE LOCATIONS
SP-1-3'	SOIL STOCKPILE SAMPLE LOCATIONS

NOTES:

1. SOURCE OF BASE MAP: FRED FIEDLER AND ASSOCIATES, DATED AUGUST 28, 2001.
2. SITE FEATURES AND LOCATIONS ARE APPROXIMATE.
3. MONITORING/EXTRACTION WELLS SURVEYED BY AZIMUTH GROUP, DATED MAY 13, 2002.



SECOR

290 Conejo Ridge Avenue, Suite 200
Thousand Oaks, CA 91361
(805) 230-1266/230-1277 (Fax)

PREPARED FOR:

ATLANTIC RICHFIELD COMPANY
STATION NO. 5110
5731 East Firestone Boulevard
South Gate, California

JOB NUMBER:

37BP.05110.04

DRAWN BY:

R. Roman

CHECKED BY:

P. Lam

APPROVED BY:

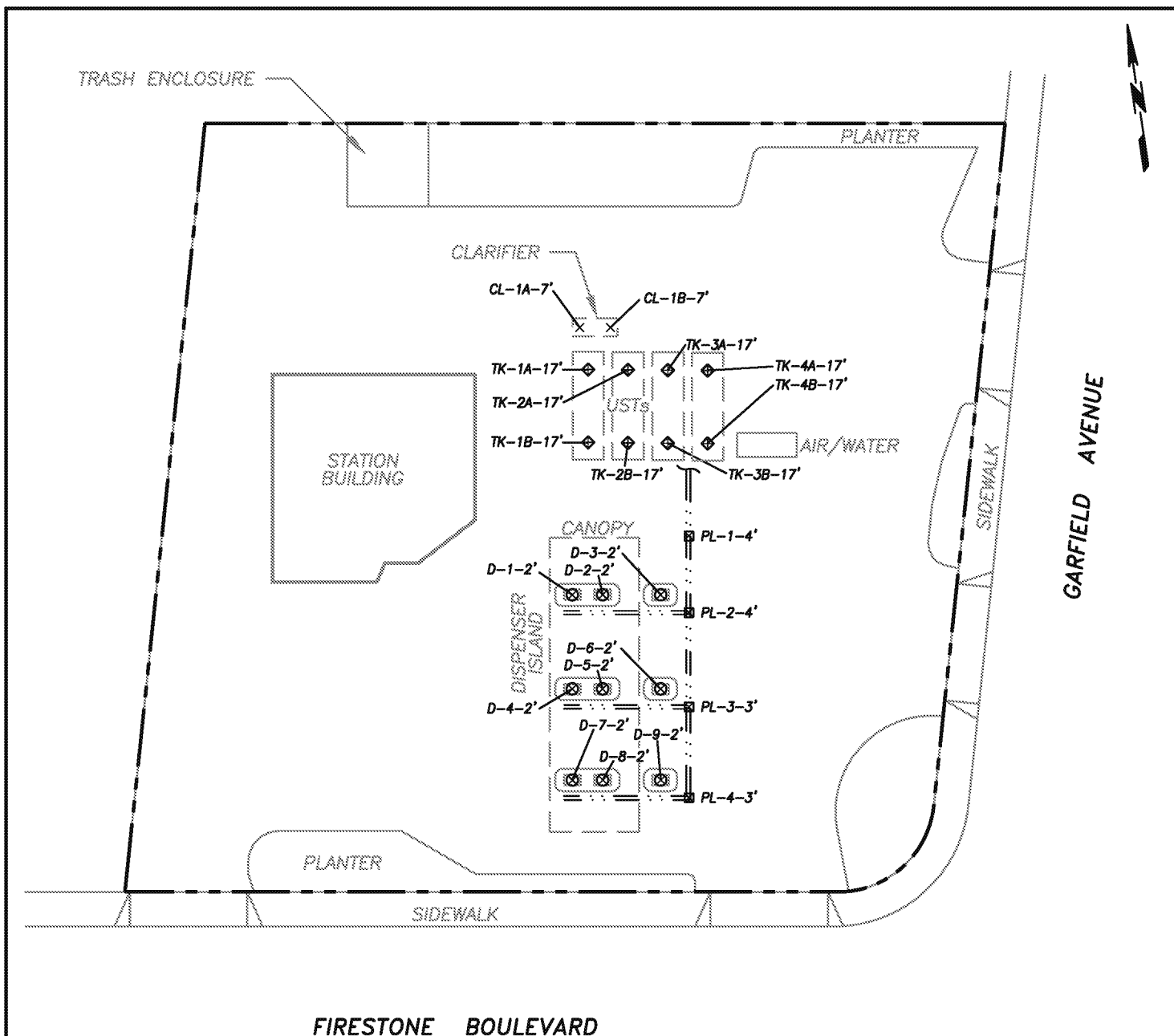
G. Roberts

FIGURE:

4

DATE:

01/15/05

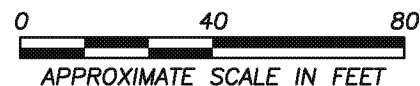



LEGEND

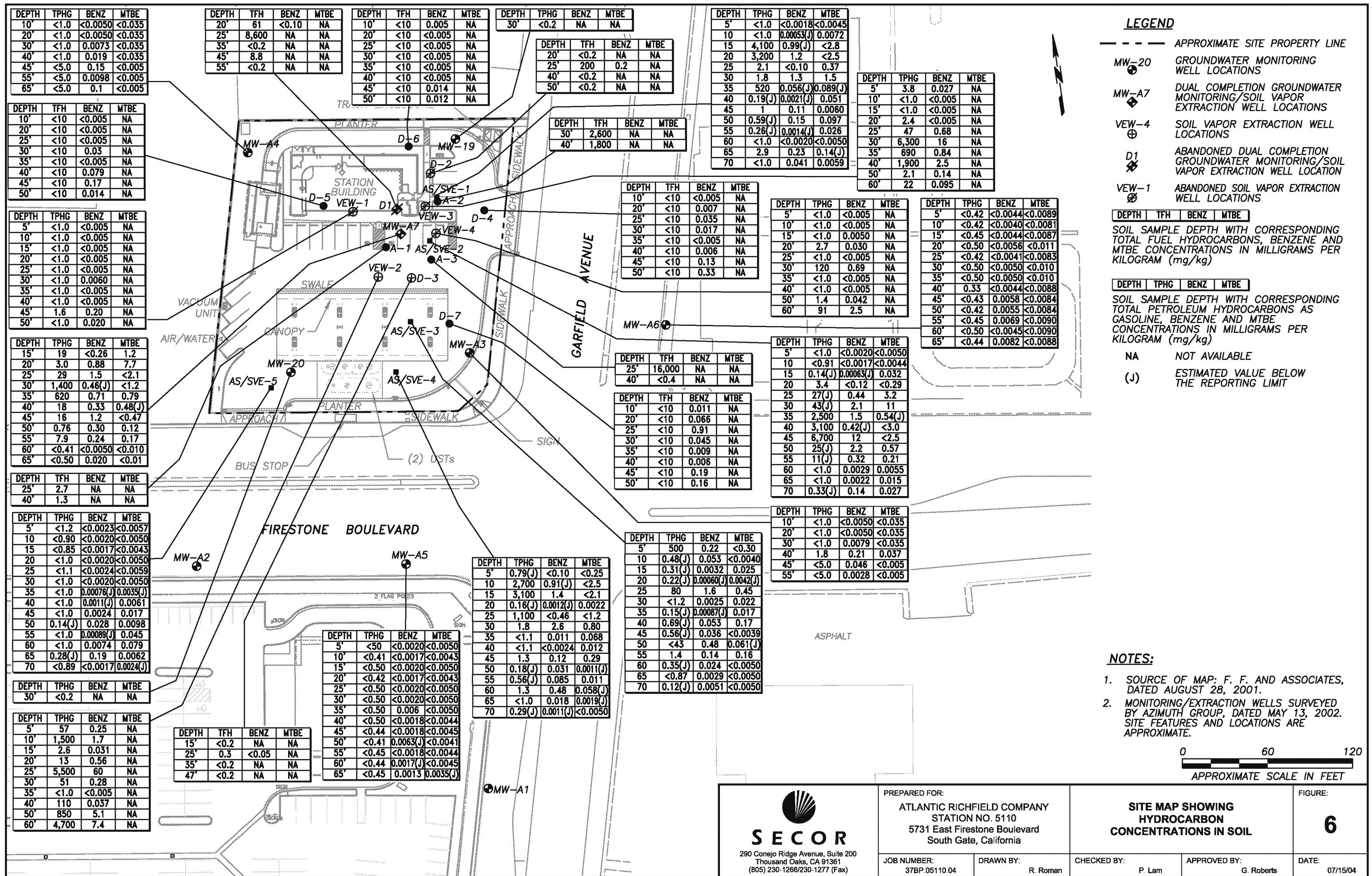
- APPROXIMATE SITE PROPERTY LINE
- - - - - PRODUCT PIPING LOCATIONS
- D-1-2'
⊗ DISPENSER SAMPLE LOCATIONS
- PL-1-4'
⊗ PRODUCT LINE SAMPLE LOCATIONS
- TK-1A-17'
⊗ USTs SAMPLE LOCATIONS
- CL-1A-7'
x CLARIFIER SAMPLE LOCATIONS

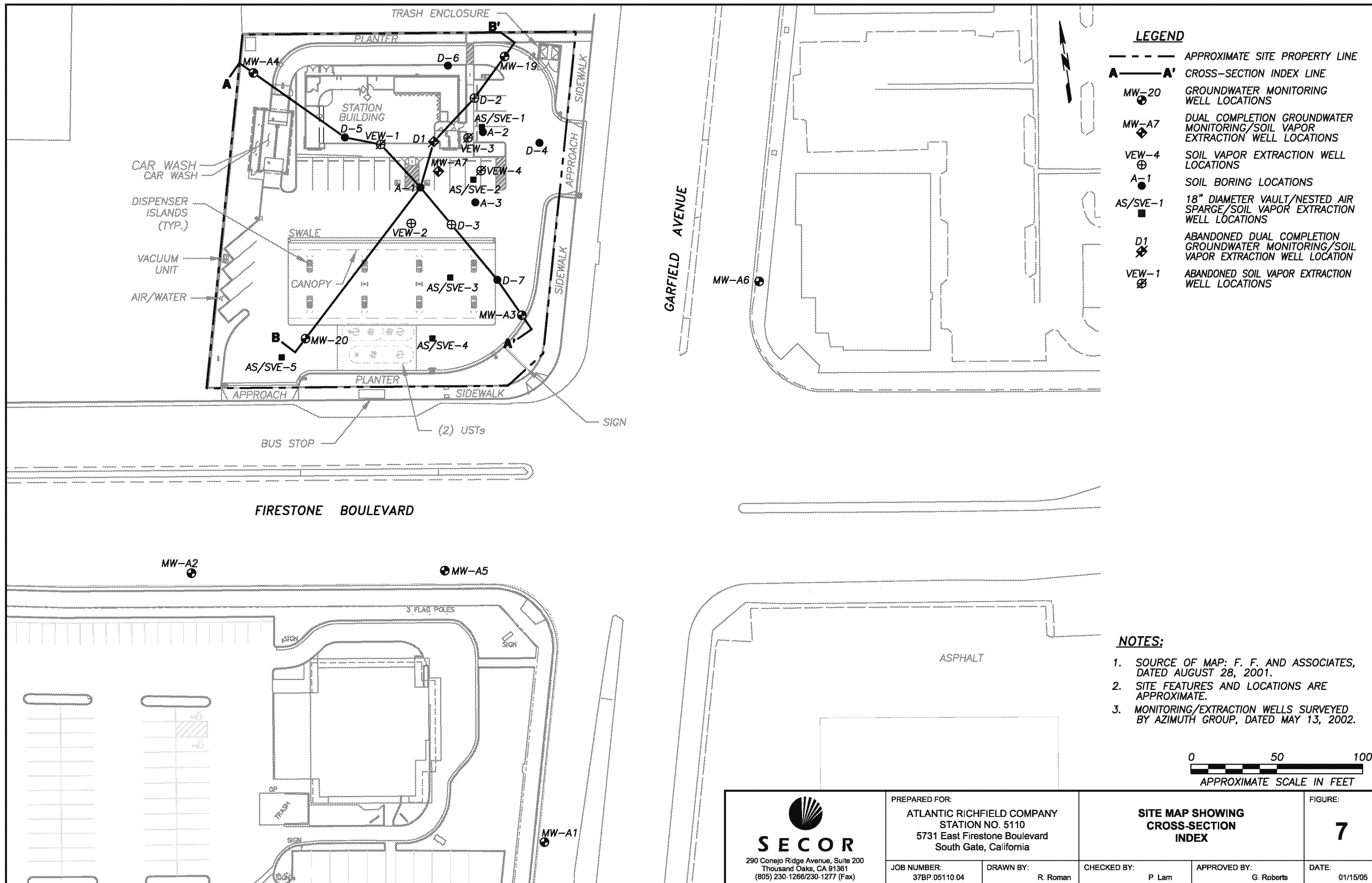
NOTES:

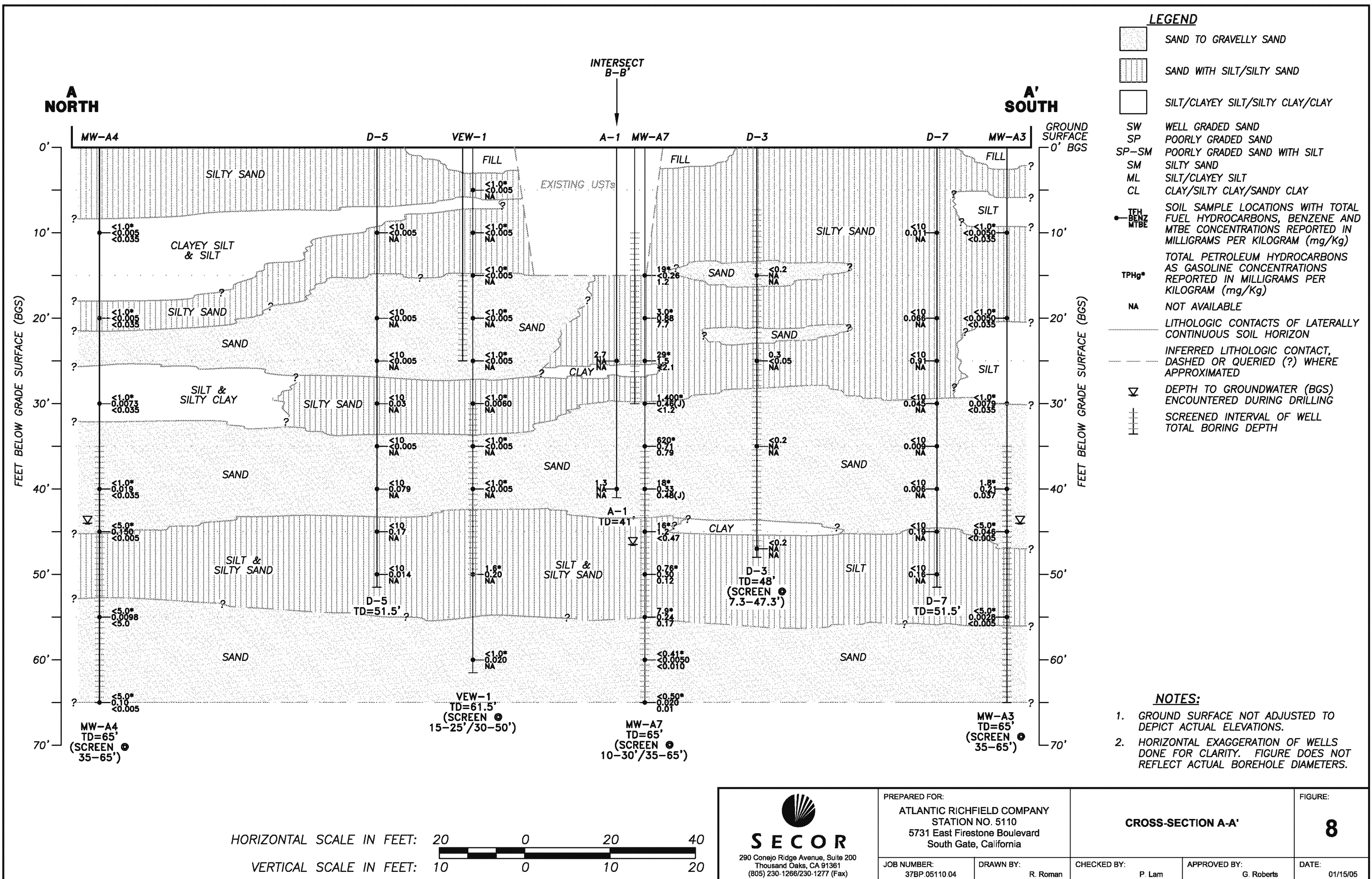
1. NOT A SURVEYED MAP, SITE FEATURES AND LOCATIONS ARE APPROXIMATE.

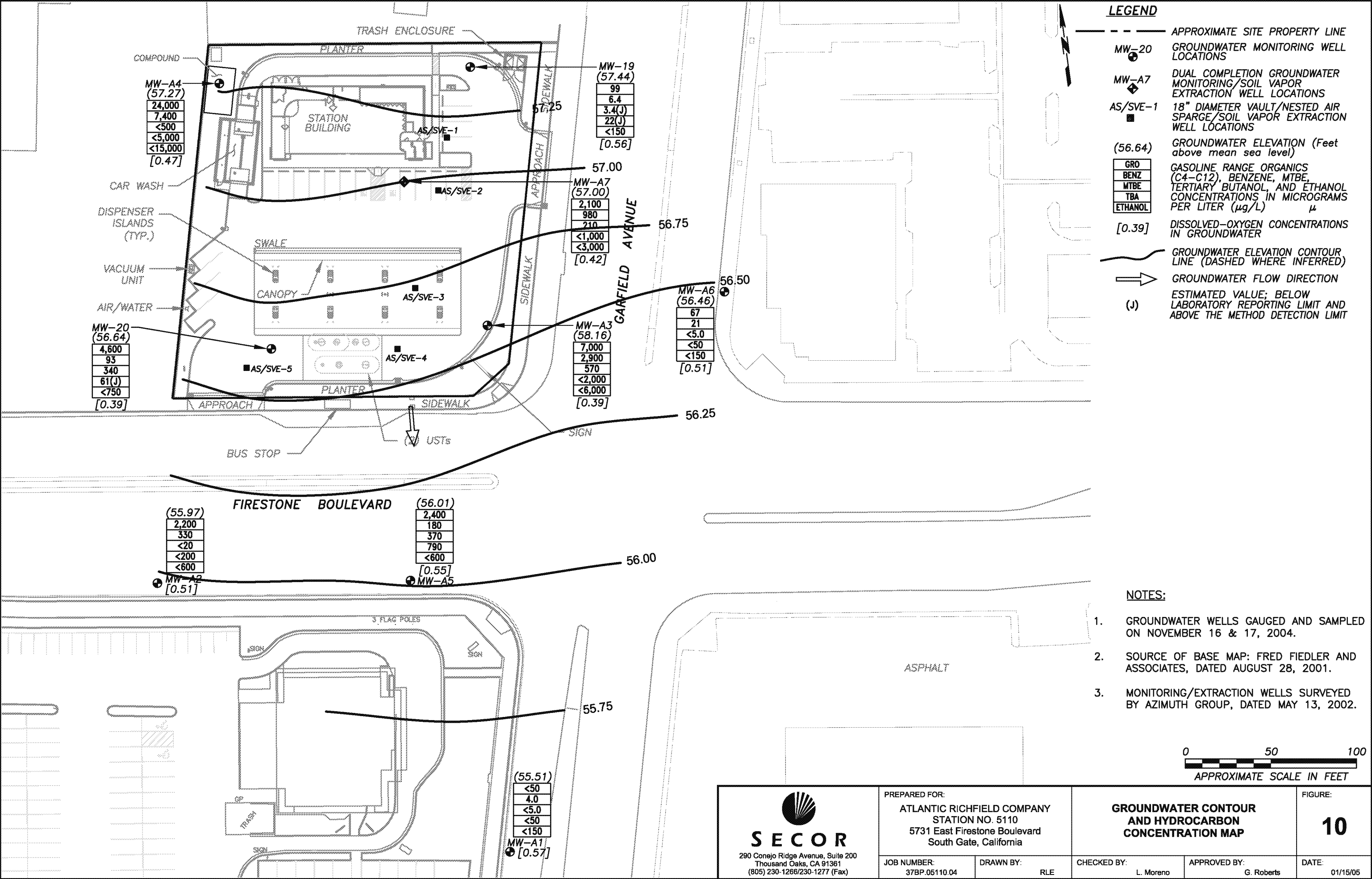


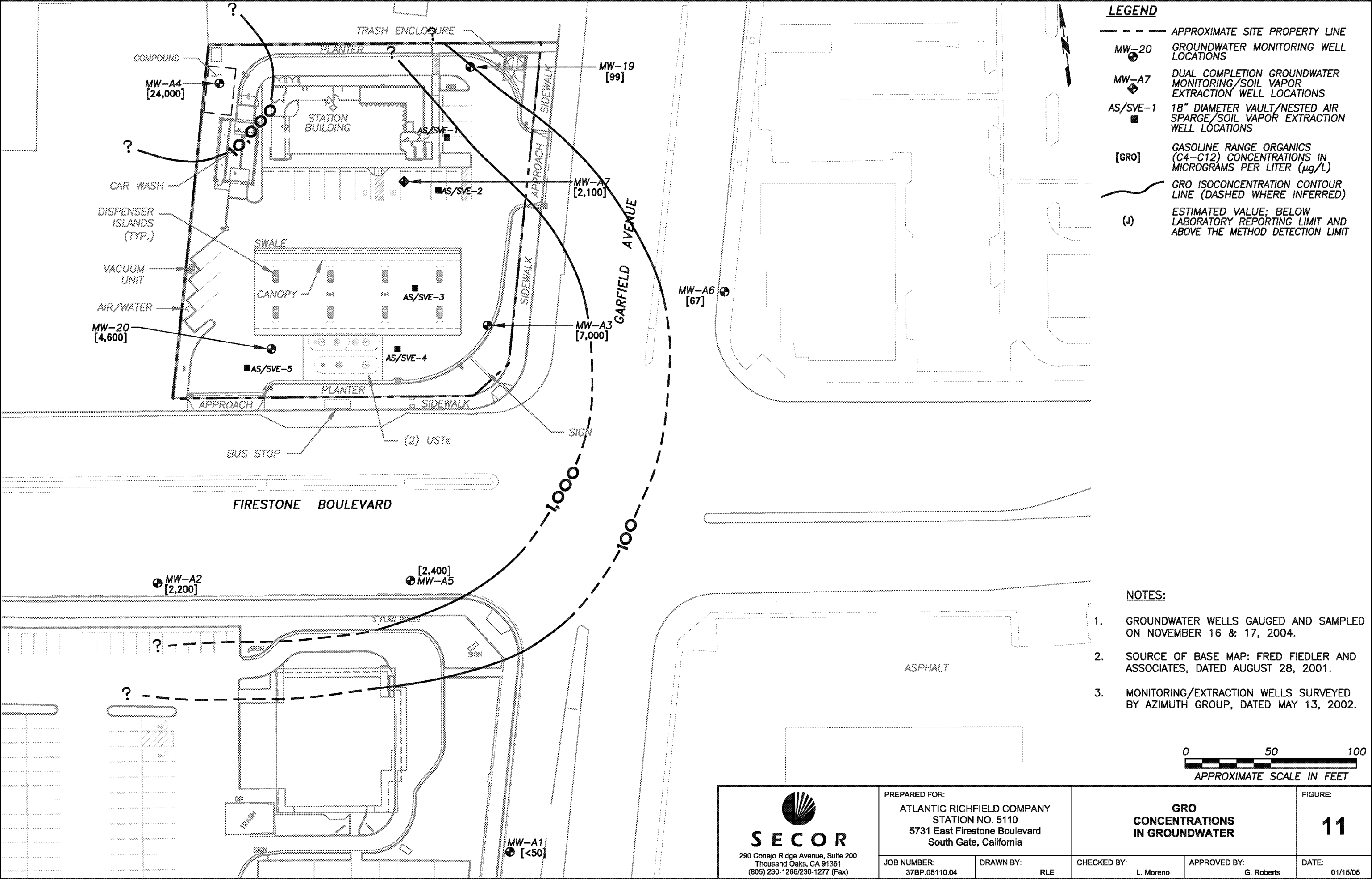
 <p>SECOR</p> <p>290 Conejo Ridge Avenue, Suite 200 Thousand Oaks, CA 91361 (805) 230-1266/230-1277 (Fax)</p>	<p>PREPARED FOR:</p> <p>ATLANTIC RICHFIELD COMPANY STATION NO. 5110 5731 East Firestone Boulevard South Gate, California</p> <p>JOB NUMBER: 37BP.05110.04</p> <p>DRAWN BY: R. Roman</p>	<p>SITE MAP SHOWING FORMER UST, PRODUCT PIPING, AND DISPENSER SAMPLE LOCATIONS</p> <p>CHECKED BY: P. Lam</p> <p>APPROVED BY: G. Roberts</p>	<p>FIGURE:</p> <p>5</p> <p>DATE: 01/15/05</p>
---	---	--	--

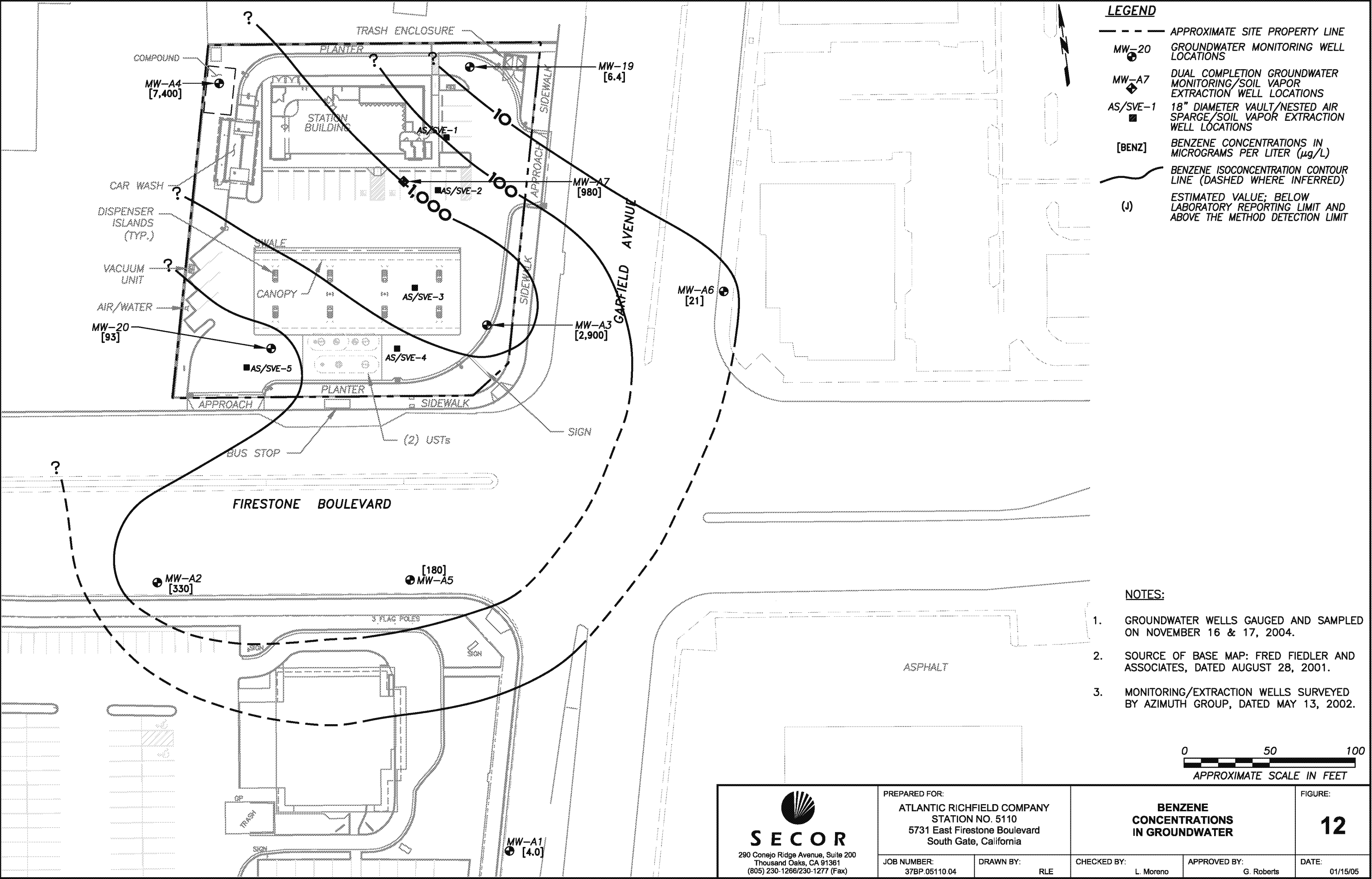


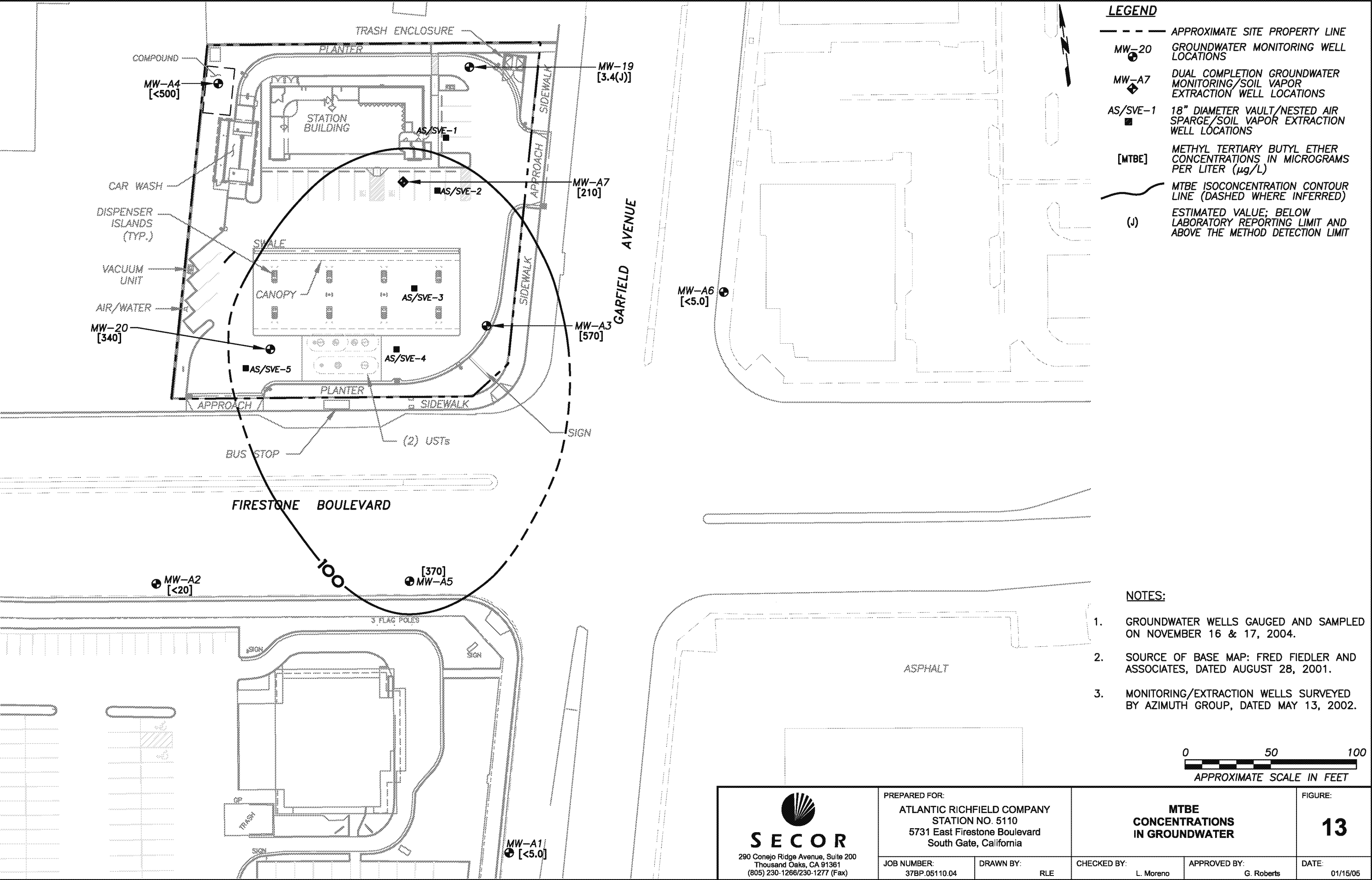


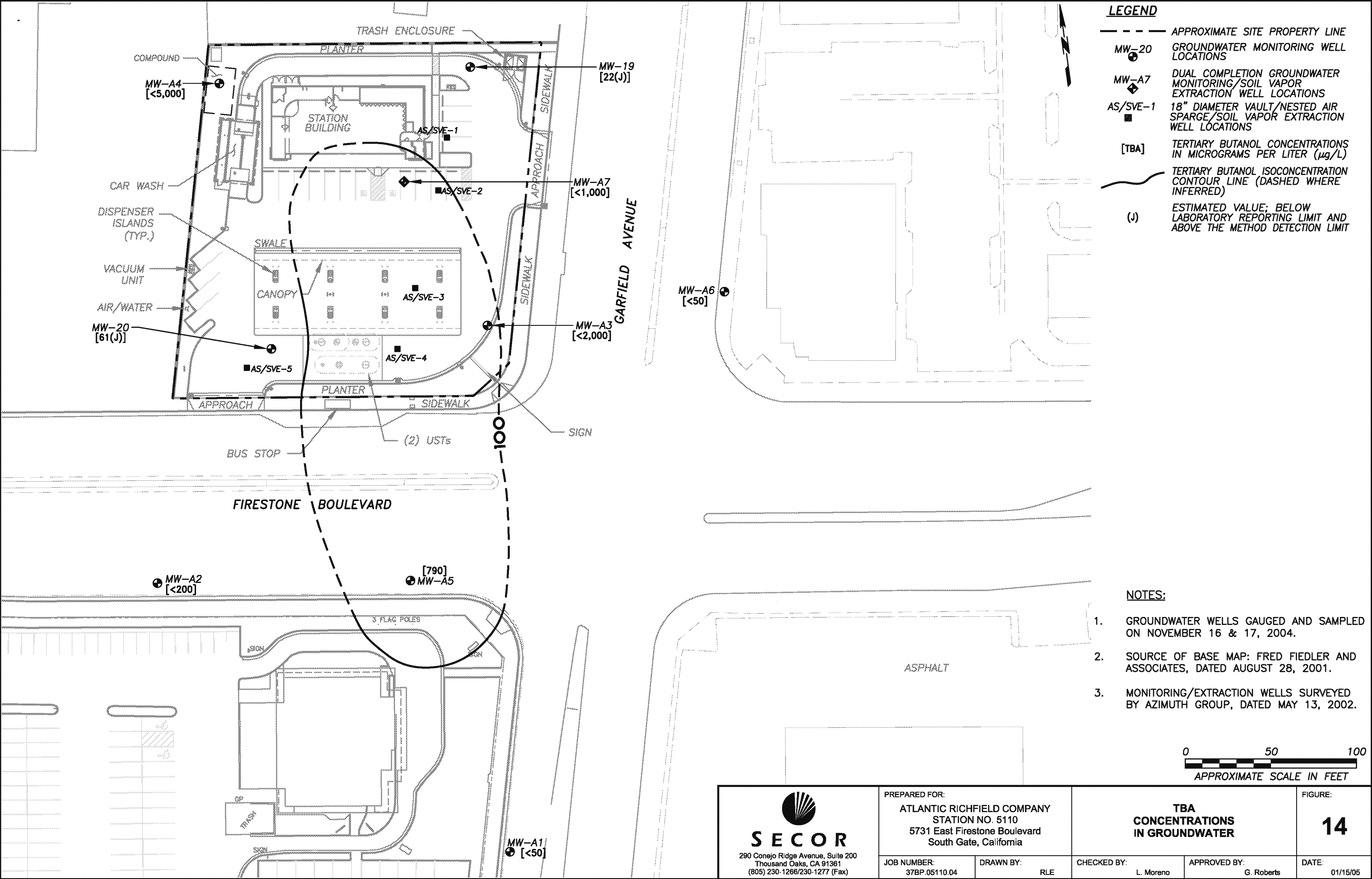


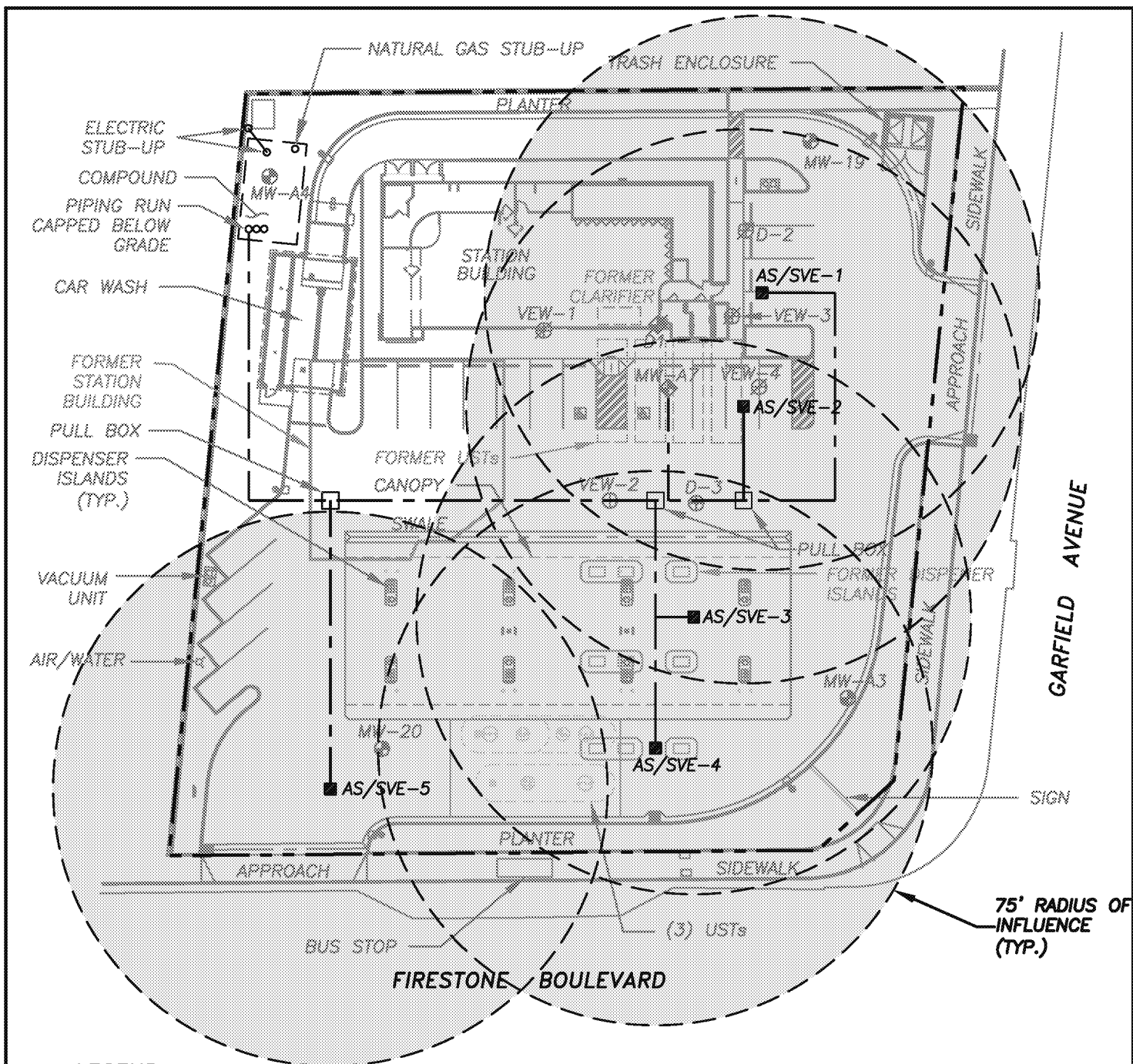












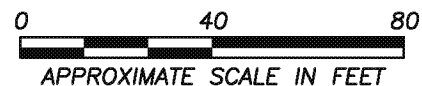
LEGEND

- APPROXIMATE SITE PROPERTY LINE
- TRENCH CENTER LINE (EACH PIPING RUN: 1-6" DIAM., 1-2" DIAM., & 1-1" DIAM. CONDUIT)
- MW-20 GROUNDWATER MONITORING WELL LOCATIONS
- MW-A7 DUAL COMPLETION GROUNDWATER MONITORING/ SOIL VAPOR EXTRACTION WELL LOCATIONS
- VEW-4 SOIL VAPOR EXTRACTION WELL LOCATIONS
- D-1 ABANDONED DUAL COMPLETION GROUNDWATER MONITORING/ SOIL VAPOR EXTRACTION WELL LOCATION
- VEW-1 ABANDONED SOIL VAPOR EXTRACTION WELL LOCATIONS

AS/SVE-1 18" DIAMETER VAULT/NESTED AIR SPARGE/SOIL VAPOR EXTRACTION WELL LOCATIONS

NOTES:

1. SOURCE OF BASE MAP: FRED FIEDLER AND ASSOCIATES, DATED AUGUST 28, 2001.
2. SITE FEATURES AND LOCATIONS ARE APPROXIMATE.
3. MONITORING/EXTRACTION WELLS SURVEYED BY AZIMUTH GROUP, DATED MAY 13, 2002.



SECOR

290 Conejo Ridge Avenue, Suite 200
Thousand Oaks, CA 91361
(805) 230-1266/230-1277 (Fax)

PREPARED FOR:

ATLANTIC RICHFIELD COMPANY
STATION NO. 5110
5731 East Firestone Boulevard
South Gate, California

JOB NUMBER:

37BP.05110.02.0936

DRAWN BY:

R. Roman

CHECKED BY:

P. Lam

APPROVED BY:

G. Roberts

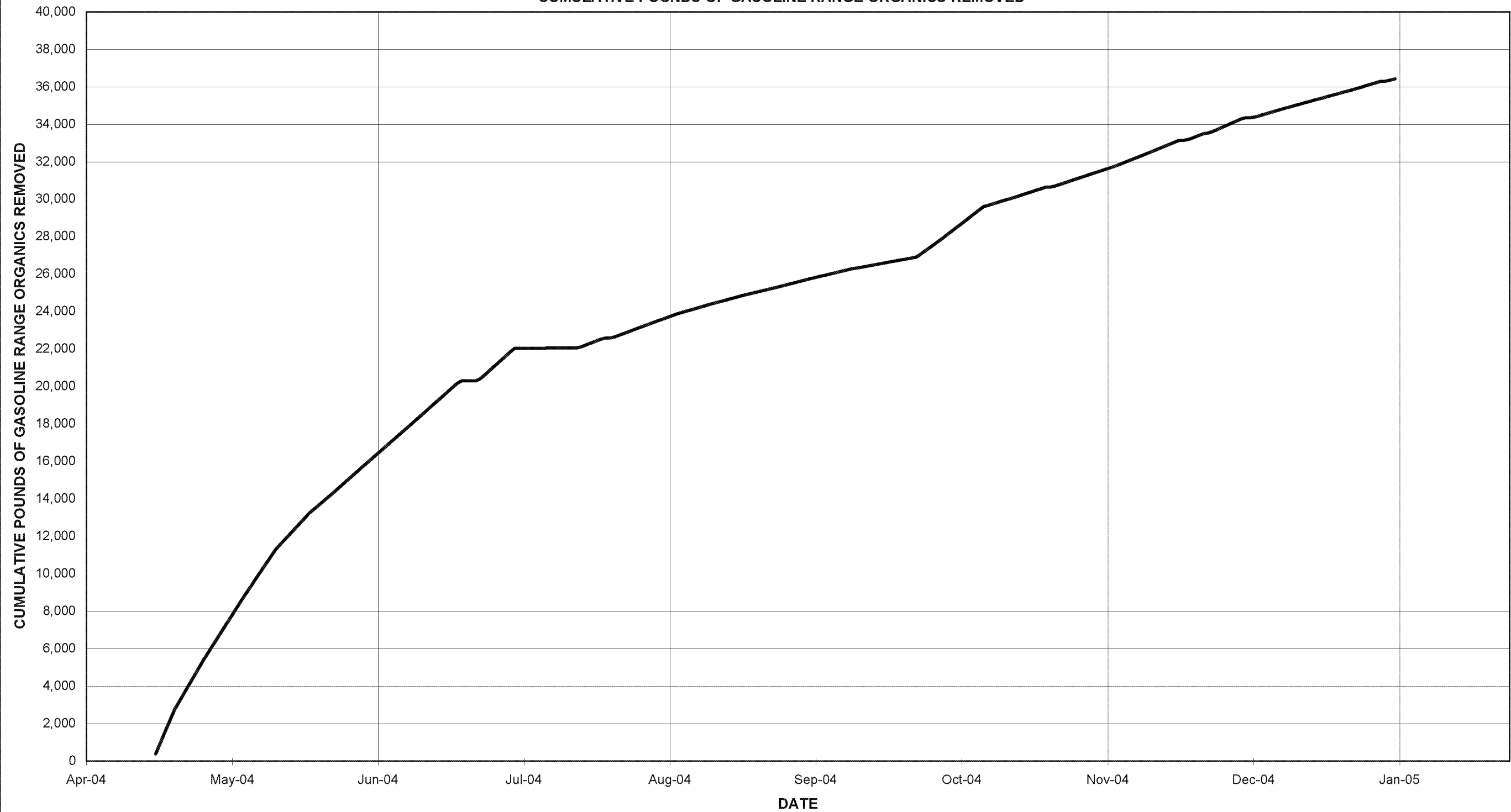
FIGURE:

15

DATE:

01/15/05

FIGURE 16
ATLANTIC RICHFIELD COMPANY STATION NO. 5110
CUMULATIVE POUNDS OF GASOLINE RANGE ORGANICS REMOVED



TABLES

TABLE 1
HISTORICAL SOIL ANALYTICAL RESULTS
ATLANTIC RICHFIELD COMPANY STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CA

EPA Method:		8015B		8260B									
Sample I.D.	Sample Date	TPHg mg/kg	TFH mg/kg	B mg/kg	T mg/kg	E mg/kg	X mg/kg	MTBE mg/kg	TBA mg/kg	DIPE mg/kg	ETBE mg/kg	TAME mg/kg	ETHANOL mg/kg
Soil Boring Samples													
A-1-25	09/20/89	--	2.7	--	--	--	--	--	--	--	--	--	--
A-1-40	09/20/89	--	1.3	--	--	--	--	--	--	--	--	--	--
A-2-30	09/20/89	--	2,600	--	--	--	--	--	--	--	--	--	--
A-2-40	09/20/89	--	1,800	--	--	--	--	--	--	--	--	--	--
A-3-25	09/20/89	--	16,000	--	--	--	--	--	--	--	--	--	--
A-3-40	09/20/89	--	<0.4	--	--	--	--	--	--	--	--	--	--
Well Installation Samples													
MW-19-30	09/20/89	--	<0.2	--	--	--	--	--	--	--	--	--	--
MW-20-30	09/21/89	--	<0.2	--	--	--	--	--	--	--	--	--	--
UST Samples													
1A-17	10/04/89	--	0.3	--	--	--	--	--	--	--	--	--	--
1B-17	10/04/89	--	16	--	--	--	--	--	--	--	--	--	--
2A-17	10/04/89	--	1,400	--	--	--	--	--	--	--	--	--	--
2B-17	10/04/89	--	<0.2	--	--	--	--	--	--	--	--	--	--
3A-17	10/04/89	--	1,100	--	--	--	--	--	--	--	--	--	--
3B-17	10/04/89	--	7,900	--	--	--	--	--	--	--	--	--	--
4A-17.5	10/04/89	--	1,400	--	--	--	--	--	--	--	--	--	--
4B-17	10/04/89	--	3.0	--	--	--	--	--	--	--	--	--	--
Well Installation Samples													
D-1-5	06/21/90	--	--	--	--	--	--	--	--	--	--	--	--
D-1-10	06/21/90	--	--	--	--	--	--	--	--	--	--	--	--
D-1-15	06/21/90	--	--	--	--	--	--	--	--	--	--	--	--
D-1-20	06/21/90	--	61 ⁸	<0.10	<0.10	0.2	1.9	--	--	--	--	--	--
D-1-25	06/21/90	--	8,600	--	--	--	--	--	--	--	--	--	--
D-1-30	06/21/90	--	--	--	--	--	--	--	--	--	--	--	--
D-1-35	06/21/90	--	<0.2	--	--	--	--	--	--	--	--	--	--
D-1-40	06/21/90	--	--	--	--	--	--	--	--	--	--	--	--
D-1-45	06/21/90	--	8.8	--	--	--	--	--	--	--	--	--	--
D-1-47	06/21/90	--	--	--	--	--	--	--	--	--	--	--	--
D-1-50	06/21/90	--	--	--	--	--	--	--	--	--	--	--	--
D-1-55	06/21/90	--	<0.2	--	--	--	--	--	--	--	--	--	--
D-1-60	06/21/90	--	--	--	--	--	--	--	--	--	--	--	--
D-1-65	06/21/90	--	--	--	--	--	--	--	--	--	--	--	--
D-1-70	06/21/90	--	--	--	--	--	--	--	--	--	--	--	--
D-2-10	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-2-15	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-2-20	06/22/90	--	<0.2	--	--	--	--	--	--	--	--	--	--
D-2-25	06/22/90	--	200 ⁸	0.2	10	11	39	--	--	--	--	--	--
D-2-30	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-2-35	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-2-40	06/22/90	--	<0.2	--	--	--	--	--	--	--	--	--	--
D-2-45	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-2-47	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-2-50	06/22/90	--	<0.2	--	--	--	--	--	--	--	--	--	--
D-2-55	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-2-60	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-2-65	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-2-70	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 1
HISTORICAL SOIL ANALYTICAL RESULTS
ATLANTIC RICHFIELD COMPANY STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CA

EPA Method:		8015B		8260B									
Sample I.D.	Sample Date	TPHg mg/kg	TFH mg/kg	B mg/kg	T mg/kg	E mg/kg	X mg/kg	MTBE mg/kg	TBA mg/kg	DIPE mg/kg	ETBE mg/kg	TAME mg/kg	ETHANOL mg/kg
D-3-10	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-3-15	06/22/90	--	<0.2	--	--	--	--	--	--	--	--	--	--
D-3-20	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-3-25	06/22/90	--	0.3	<0.05	<0.05	0.05	0.3	--	--	--	--	--	--
D-3-30	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-3-35	06/22/90	--	<0.2	--	--	--	--	--	--	--	--	--	--
D-3-40	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-3-45	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-3-47	06/22/90	--	<0.2	--	--	--	--	--	--	--	--	--	--
D-3-50	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-3-55	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-3-60	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-3-65	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-3-70	06/22/90	--	--	--	--	--	--	--	--	--	--	--	--
D-4-10	12/16/92	--	<10	<0.005	<0.005	<0.005	0.02	--	--	--	--	--	--
D-4-20	12/16/92	--	<10	0.007	0.007	0.007	0.024	--	--	--	--	--	--
D-4-25	12/16/92	--	<10	0.035	0.017	0.017	0.03	--	--	--	--	--	--
D-4-30	12/16/92	--	<10	0.017	0.004	0.004	0.015	--	--	--	--	--	--
D-4-35	12/16/92	--	<10	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
D-4-40	12/16/92	--	<10	0.006	0.007	0.007	0.023	--	--	--	--	--	--
D-4-45	12/16/92	--	<10	0.13	0.01	0.01	0.19	--	--	--	--	--	--
D-4-50	12/16/02	--	<10	0.33	0.16	0.16	0.4	--	--	--	--	--	--
D-5-10	12/16/92	--	<10	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
D-5-20	12/16/92	--	<10	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
D-5-25	12/16/92	--	<10	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
D-5-30	12/16/92	--	<10	0.03	0.006	0.026	0.081	--	--	--	--	--	--
D-5-35	12/16/92	--	<10	<0.005	0.006	<0.005	<0.015	--	--	--	--	--	--
D-5-40	12/16/92	--	<10	0.079	<0.005	0.042	0.064	--	--	--	--	--	--
D-5-45	12/16/92	--	<10	0.17	0.02	0.076	0.13	--	--	--	--	--	--
D-5-50	12/16/02	--	<10	0.014	0.008	0.005	<0.015	--	--	--	--	--	--
D-6-10	12/16/92	--	<10	0.005	0.007	<0.005	<0.015	--	--	--	--	--	--
D-6-20	12/16/92	--	<10	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
D-6-25	12/16/92	--	<10	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
D-6-30	12/16/92	--	<10	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
D-6-35	12/16/92	--	<10	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
D-6-40	12/16/92	--	<10	<0.005	0.007	<0.005	0.018	--	--	--	--	--	--
D-6-45	12/16/92	--	<10	0.014	<0.005	0.056	0.096	--	--	--	--	--	--
D-6-50	12/16/92	--	<10	0.012	<0.005	0.006	<0.015	--	--	--	--	--	--
D-7-10	12/16/92	--	<10	0.011	<0.005	<0.005	0.058	--	--	--	--	--	--
D-7-20	12/16/92	--	<10	0.066	0.014	0.012	0.057	--	--	--	--	--	--
D-7-25	12/16/92	--	<10	0.91	1.4	0.31	1.4	--	--	--	--	--	--
D-7-30	12/16/92	--	<10	0.045	0.074	0.02	0.12	--	--	--	--	--	--
D-7-35	12/16/92	--	<10	0.009	0.011	<0.005	0.024	--	--	--	--	--	--
D-7-40	12/16/92	--	<10	0.006	0.013	<0.005	0.02	--	--	--	--	--	--
D-7-45	12/16/92	--	<10	0.19	0.23	0.057	0.28	--	--	--	--	--	--
D-7-50	12/16/92	--	<10	0.16	0.26	0.063	0.3	--	--	--	--	--	--
VEW-1-5	04/06/95	<1.0	--	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
VEW-1-10	04/06/95	<1.0	--	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
VEW-1-15	04/06/95	<1.0	--	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
VEW-1-20	04/06/95	<1.0	--	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
VEW-1-25	04/06/95	<1.0	--	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
VEW-1-30	04/06/95	<1.0	--	0.0060	<0.005	<0.005	<0.015	--	--	--	--	--	--
VEW-1-35	04/06/95	<1.0	--	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
VEW-1-40	04/06/95	<1.0	--	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
VEW-1-50	04/06/95	1.6	--	0.2	0.18	0.065	0.22	--	--	--	--	--	--
VEW-1-60	04/06/95	<1.0	--	0.020	0.017	0.0067	0.024	--	--	--	--	--	--

TABLE 1
HISTORICAL SOIL ANALYTICAL RESULTS
ATLANTIC RICHFIELD COMPANY STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CA

EPA Method:		8015B		8260B									
Sample I.D.	Sample Date	TPHg mg/kg	TFH mg/kg	B mg/kg	T mg/kg	E mg/kg	X mg/kg	MTBE mg/kg	TBA mg/kg	DIPE mg/kg	ETBE mg/kg	TAME mg/kg	ETHANOL mg/kg
VEW-2-5	04/05/95	--	--	0.25	0.45	0.51	4.3	--	--	--	--	--	--
VEW-2-10	04/05/95	--	--	1.7	6.8	14	94	--	--	--	--	--	--
VEW-2-15	04/05/95	--	--	0.031	0.079	0.019	0.15	--	--	--	--	--	--
VEW-2-20	04/05/95	--	--	0.56	0.61	0.15	0.99	--	--	--	--	--	--
VEW-2-25	04/05/95	--	--	60	370	150	770	--	--	--	--	--	--
VEW-2-30	04/05/95	--	--	0.28	0.14	0.24	1.7	--	--	--	--	--	--
VEW-2-35	04/05/95	--	--	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
VEW-2-40	04/05/95	--	--	0.037	1	1.1	7.3	--	--	--	--	--	--
VEW-2-50	04/05/95	--	--	5.1	20	15	90	--	--	--	--	--	--
VEW-2-60	04/05/95	--	--	7.4	26	35	250	--	--	--	--	--	--
VEW-3-5	04/05/95	--	--	0.027	0.055	0.024	0.2	--	--	--	--	--	--
VEW-3-10	04/05/95	--	--	<0.005	<0.005	<0.005	0.031	--	--	--	--	--	--
VEW-3-15	04/05/95	--	--	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
VEW-3-20	04/05/95	--	--	<0.005	0.005	<0.005	0.053	--	--	--	--	--	--
VEW-3-25	04/05/95	--	--	0.68	2.6	0.93	5.4	--	--	--	--	--	--
VEW-3-30	04/05/95	--	--	16	160	140	940	--	--	--	--	--	--
VEW-3-35	04/05/95	--	--	0.84	5.8	7.2	60	--	--	--	--	--	--
VEW-3-40	04/05/95	--	--	2.5	23	25	190	--	--	--	--	--	--
VEW-3-50	04/05/95	--	--	0.14	0.28	0.070	0.39	--	--	--	--	--	--
VEW-3-60	04/05/95	--	--	0.095	0.94	0.30	1.8	--	--	--	--	--	--
VEW-4-5	04/05/95	--	--	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
VEW-4-10	04/05/95	--	--	<0.005	<0.005	<0.005	<0.015	--	--	--	--	--	--
VEW-4-15	04/05/95	--	--	0.0050	<0.005	0.0060	0.040	--	--	--	--	--	--
VEW-4-20	04/05/95	--	--	0.03	0.076	0.045	0.035	--	--	--	--	--	--
VEW-4-25	04/05/95	--	--	<0.005	0.011	0.0086	0.054	--	--	--	--	--	--
VEW-4-30	04/05/95	--	--	0.69	1.4	1.7	11	--	--	--	--	--	--
VEW-4-35	04/05/95	--	--	<0.005	<0.005	<0.005	0.04	--	--	--	--	--	--
VEW-4-40	04/05/95	--	--	<0.005	0.005	<0.005	0.019	--	--	--	--	--	--
VEW-4-50	04/05/95	--	--	0.042	0.17	0.056	0.39	--	--	--	--	--	--
VEW-4-60	04/05/95	--	--	2.5	8.8	2.3	11	--	--	--	--	--	--
MW-A3-10'	12/01/99	<1.0	--	<0.0050	<0.0050	<0.0050	<0.015	<0.035	--	--	--	--	--
MW-A3-20'	12/01/99	<1.0	--	<0.0050	<0.0050	<0.0050	<0.015	<0.035	--	--	--	--	--
MW-A3-30'	12/01/99	<1.0	--	0.0079	<0.0050	<0.0050	<0.015	<0.035	--	--	--	--	--
MW-A3-40'	12/01/99	1.8	--	0.21	0.0061	0.072	0.31	0.037	--	--	--	--	--
MW-A3-45'	12/01/99	--	<5.0	0.046	<0.002	0.039	0.208	<0.005	--	--	--	--	--
MW-A3-55'	12/01/99	--	<5.0	0.0028	<0.002	<0.002	<0.004	<0.005	--	--	--	--	--
MW-A4-10'	12/01/99	<1.0	--	<0.0050	<0.0050	<0.0050	<0.015	<0.035	--	--	--	--	--
MW-A4-20'	12/01/99	<1.0	--	<0.0050	<0.0050	<0.0050	<0.015	<0.035	--	--	--	--	--
MW-A4-30'	12/01/99	<1.0	--	0.0073	<0.0050	<0.0050	<0.015	<0.035	--	--	--	--	--
MW-A4-40'	12/01/99	<1.0	--	0.019	<0.0050	<0.0050	<0.015	<0.035	--	--	--	--	--
MW-A4-45'	12/01/99	--	<5.0	0.150	0.17	0.028	0.082	<0.005	--	--	--	--	--
MW-A4-55'	12/01/99	--	<5.0	0.0098	<0.002	0.013	0.0066	<0.005	--	--	--	--	--
MW-A4-65'	12/01/99	--	<5.0	0.1	<0.002	0.0073	0.0068	<0.005	--	--	--	--	--
MW-A5-5	10/21/01	<0.50	--	<0.0020	<0.0020	<0.0020	<0.0040	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	--
MW-A5-10	10/21/01	<0.41	--	<0.0017	<0.0017	<0.0017	<0.0017	<0.0043	<0.043	<0.0043	<0.0043	<0.0043	--
MW-A5-15	10/21/01	<0.50	--	<0.0020	<0.0020	<0.0020	<0.0040	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	--
MW-A5-20	10/21/01	<0.42	--	<0.0017	<0.0017	<0.0017	<0.0035	<0.0043	<0.043	<0.0043	<0.0043	<0.0043	--
MW-A5-25	10/21/01	<0.50	--	<0.0020	<0.0020	<0.0020	<0.0040	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	--
MW-A5-30	10/21/01	<0.50	--	<0.0020	<0.0020	<0.0020	0.00061 ^J	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	--
MW-A5-35	10/21/01	<0.50	--	0.0060	<0.0020	0.0016 ^J	0.0055	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	--
MW-A5-40	10/21/01	<0.50	--	<0.0018	<0.0018	<0.0018	<0.0036	<0.0044	<0.044	<0.0044	<0.0044	<0.0044	--
MW-A5-45	10/21/01	<0.44	--	<0.0018	<0.0018	<0.0018	<0.0036	<0.0045	<0.045	<0.0045	<0.0045	<0.0045	--
MW-A5-50	10/21/01	<0.41	--	0.00063 ^J	<0.0017	<0.0017	<0.0033	<0.0041	<0.041	<0.0041	<0.0041	<0.0041	--
MW-A5-55	10/21/01	<0.45	--	<0.0018	<0.0018	<0.0018	<0.0036	<0.0044	<0.044	<0.0044	<0.0044	<0.0044	--
MW-A5-60	10/21/01	<0.44	--	0.0017 ^J	0.00043 ^J	0.00039 ^J	0.0024 ^J	<0.0045	<0.045	<0.0045	<0.0045	<0.0045	--
MW-A5-65	10/21/01	<0.45	--	0.0013 ^J	0.00029 ^J	0.00026 ^J	0.0020 ^J	0.0035 ^J	<0.050	<0.0050	<0.0050	<0.0050	--

TABLE 1
HISTORICAL SOIL ANALYTICAL RESULTS
ATLANTIC RICHFIELD COMPANY STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CA

EPA Method:		8015B		8260B									
Sample I.D.	Sample Date	TPHg mg/kg	TFH mg/kg	B mg/kg	T mg/kg	E mg/kg	X mg/kg	MTBE mg/kg	TBA mg/kg	DIPE mg/kg	ETBE mg/kg	TAME mg/kg	ETHANOL mg/kg
MW-A6-5	10/30/01	<0.42	--	<0.0044	<0.0044	<0.0044	<0.0044	<0.0089	<0.044	<0.0089	<0.0089	<0.0089	--
MW-A6-10	10/30/01	<0.42	--	<0.0040	<0.0040	<0.0040	<0.0040	<0.0081	<0.040	<0.0081	<0.0081	<0.0081	--
MW-A6-15	10/30/01	<0.45	--	<0.0044	<0.0044	<0.0044	<0.0044	<0.0087	<0.044	<0.0087	<0.0087	<0.0087	--
MW-A6-20	10/30/01	<0.50	--	<0.0056	<0.0056	<0.0056	<0.0056	<0.011	<0.056	<0.011	<0.011	<0.011	--
MW-A6-25	10/30/01	<0.42	--	<0.0041	<0.0041	<0.0041	<0.0041	<0.0083	<0.041	<0.0083	<0.0083	<0.0083	--
MW-A6-30	10/30/01	<0.50	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.050	<0.010	<0.010	<0.010	--
MW-A6-35	10/30/01	<0.50	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.050	<0.010	<0.010	<0.010	--
MW-A6-40	10/30/01	0.33 ^J	--	<0.0044	<0.0044	<0.0044	<0.0044	<0.0088	<0.044	<0.0088	<0.0088	<0.0088	--
MW-A6-45	10/30/01	<0.43	--	0.0058	<0.0042	<0.0042	<0.0042	<0.0084	<0.042	<0.0084	<0.0084	<0.0084	--
MW-A6-50	10/30/01	<0.42	--	0.0055	<0.0042	<0.0042	<0.0042	<0.0084	<0.042	<0.0084	<0.0084	<0.0084	--
MW-A6-55	10/30/01	<0.45	--	0.0069	<0.0045	<0.0045	<0.0045	<0.0090	<0.045	<0.0090	<0.0090	<0.0090	--
MW-A6-60	10/30/01	<0.50	--	<0.0045	<0.0045	<0.0045	<0.0045	<0.0090	<0.045	<0.0090	<0.0090	<0.0090	--
MW-A6-65	10/30/01	<0.44	--	0.0082	<0.0044	<0.0044	<0.0044	<0.0088	<0.044	<0.0088	<0.0088	<0.0088	--
MW-A7-15	04/16/02	19	--	<0.26	0.23 ^J	0.19 ^J	1.3	1.2	11	<0.52	<0.52	<0.52	--
MW-A7-20	04/16/02	3.0	--	0.88	2.7	0.57	3.2	7.7	16	<0.50	<0.50	<0.50	--
MW-A7-25	04/16/02	29	--	1.5	30	33	170	<2.1	<11	<2.1	<2.1	<2.1	--
MW-A7-30	04/16/02	1,400	--	0.46 ^J	14	22	120	<1.2	<6.1	<1.2	<1.2	<1.2	--
MW-A7-35	04/16/02	620	--	0.71	16	21	120	0.79	<2.6	<0.52	<0.52	<0.52	--
MW-A7-40	04/16/02	18	--	0.33	8.1	13	69	0.48 ^J	<2.6	<0.51	<0.51	<0.51	--
MW-A7-45	04/16/02	16	--	1.2	3.9	0.77	4.1	<0.47	<2.4	<0.47	<0.47	<0.47	--
MW-A7-50	04/16/02	0.76	--	0.30	0.81	0.16	0.72	0.12	0.050	<0.0090	<0.0090	<0.0090	--
MW-A7-55	04/16/02	7.9	--	0.24	0.21	0.29	1.2	0.17	0.12	<0.010	<0.010	<0.010	--
MW-A7-60	04/16/02	<0.41	--	<0.0050	0.0025 ^J	<0.0050	0.010	<0.010	<0.050	<0.010	<0.010	<0.010	--
MW-A7-65	04/16/02	<0.50	--	0.020	0.022	0.011	0.061	0.01	<0.050	<0.010	<0.010	<0.010	--
UST Samples													
TK-1A-17	02/07/02	--	1.80	0.098	0.20	0.07	0.30	<0.010	<0.010	0.02	18	1.3	--
TK-1B-17	02/07/02	--	4,600	6.9	69	69	340	<2.2	<2.2	<2.2	6.8 ^J	8.1	--
TK-2A-17	02/07/02	--	17	0.29	1.2	0.30	1.8	<0.49	<0.49	<0.49	1.5 ^J	3.0	--
TK-2B-17	02/07/02	--	1,900	1.2	6.5	24	110	<0.45	<0.45	<0.45	8.4	4.6	--
TK-3A-17	02/07/02	--	3,300	11	120	71	390	<2.2	<2.2	<2.2	5.9 ^J	4.7	--
TK-3B-17	02/07/02	--	1.20	<0.27	0.33	0.14 ^J	0.81	<0.54	<0.54	<0.54	23.00	1.30	--
TK-4A-17	02/07/02	--	8,800	16	270	130	820	<27	<27	<27	<140	<27	--
TK-4B-17	02/07/02	--	2.10	<0.26	0.11 ^J	<0.26	0.31	<0.52	<0.52	<0.52	24	1.3	--
Dispenser Samples													
D-1-2	02/01/02	--	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.010	--
D-2-2	02/01/02	--	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.010	--
D-3-2	02/01/02	--	<0.65	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.010	--
D-4-2	02/01/02	--	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.010	--
D-5-2	02/01/02	--	<1.6	<0.0067	<0.0067	<0.0067	<0.0067	<0.013	<0.013	<0.013	0.18	0.0099 ^J	--
D-6-2	02/01/02	--	3,500	<0.58	3.2	4.1	360	<1.2	<1.2	<1.2	4.7 ^J	2.7	--
D-7-2	02/01/02	--	<0.79	<0.0072	<0.0072	<0.0072	0.025	<0.014	<0.014	<0.014	<0.072	0.22	--
D-8-2	02/01/02	--	<1.1	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	0.18	--
D-9-2	02/01/02	--	<0.50	<0.0068	<0.0068	<0.0068	<0.0068	<0.014	<0.014	<0.014	<0.068	<0.014	--
Product Line Samples													
PL-1-4	02/01/02	--	<0.45	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.010	--
PL-2-4	02/01/02	--	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	0.10	0.04	--
PL-3-3	02/01/02	--	<0.57	<0.0064	<0.0064	<0.0064	<0.0064	<0.013	<0.013	<0.013	<0.064	<0.013	--
PL-4-3	02/01/02	--	<0.57	<0.0045	<0.0045	<0.0045	<0.0045	<0.0091	<0.0091	<0.0091	<0.045	<0.0091	--
Confirmation Sample													
CS-1-5	02/04/02	--	3,200	<0.26	1.80	2.90	23.00	<0.53	<0.53	<0.53	2.3 ^J	6.10	--

TABLE 1
HISTORICAL SOIL ANALYTICAL RESULTS
ATLANTIC RICHFIELD COMPANY STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CA

EPA Method:		8015B		8260B									
Sample I.D.	Sample Date	TPHg mg/kg	TFH mg/kg	B mg/kg	T mg/kg	E mg/kg	X mg/kg	MTBE mg/kg	TBA mg/kg	DIPE mg/kg	ETBE mg/kg	TAME mg/kg	ETHANOL mg/kg
Clarifier Sample													
CL-1A-7	02/05/02	8.90	--	<0.0068	<0.0068	<0.0068	<0.0068	<0.014	<0.014	<0.014	0.068	<0.014	--
CL-1B-7	02/05/02	8.20	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.010	--
Shoring Boring Samples													
SB-1-10	02/07/02	--	<0.50	<0.0044	0.0021 ^J	<0.0044	<0.0044	<0.0088	<0.0088	<0.0088	<0.044	<0.0088	--
SB-2-5	02/07/02	--	<0.50	<0.0045	0.020	0.0046	0.028	<0.0091	<0.0091	<0.0091	<0.045	<0.0091	--
SB-2-10	02/07/02	--	<0.42	<0.0050	0.10	0.019	0.120	<0.010	<0.010	<0.010	<0.050	<0.010	--
SB-2-15	02/07/02	--	<0.50	<0.0050	<0.0050	<0.0050	<0.0050	<0.010	<0.010	<0.010	<0.050	<0.010	--
SB-3-5	02/07/02	--	<0.45	<0.0050	0.023	0.017	0.092	<0.010	<0.010	<0.010	<0.050	<0.010	--
SB-3-10	02/07/02	--	<0.40	<0.0041	0.0019 ^J	<0.0041	0.0044	<0.0082	<0.0082	<0.0082	<0.041	<0.0082	--
SB-3-15	02/07/02	--	<0.45	<0.0041	<0.0041	<0.0041	<0.0041	<0.0082	<0.0082	<0.0082	<0.041	<0.0082	--
SB-4-5	02/07/02	--	<0.50	<0.0050	0.0023 ^J	<0.0050	0.0051	<0.010	<0.010	<0.010	<0.050	<0.010	--
SB-4-10	02/07/02	--	<0.40	<0.0045	<0.0045	<0.0045	<0.0045	<0.0091	<0.0091	<0.0091	<0.045	<0.0091	--
SB-4-15	02/07/02	--	<0.43	<0.0042	<0.0042	<0.0042	<0.0042	<0.0085	<0.0085	<0.0085	<0.042	<0.0085	--
SB-5-5	02/07/02	--	1,200	<0.85	12	31	200	<1.7	<1.7	<1.7	<8.5	<1.7	--
SB-5-10	02/07/02	--	65	<0.24	0.16 ^J	0.39	2.9	<0.48	<0.48	<0.48	<2.4	<0.48	--
SB-5-15	02/07/02	--	850	0.20 ^J	7.6	14	89	<0.91	<0.91	<0.91	<4.5	0.55 ^J	--
Air Sparge/Soil Vapor Extraction Well Samples													
AS/SVE-1-5	09/30/03	<1.0	--	<0.0018	<0.0018	<0.0018	<0.0036	<0.0045	<0.045	<0.0045	<0.0045	<0.0045	<0.27
AS/SVE-1-10	09/30/03	<1.0	--	0.00053 ^J	<0.0018	0.01	<0.0036	0.0072	0.13	<0.0045	<0.0045	<0.0045	<0.27
AS/SVE-1-15	09/30/03	4,100	--	0.99 ^J	22	49	350	<2.8	<56	<2.8	<2.8	<2.8	<170
AS/SVE-1-20	09/30/03	3,200	--	1.2	36	76	510	<2.5	<50	<2.5	<2.5	<2.5	<150
AS/SVE-1-25	09/30/03	2.1	--	<0.10	0.18	0.081 ^J	0.59	0.37	0.76 ^J	<0.25	<0.25	<0.25	<15
AS/SVE-1-30	09/30/03	1.8	--	1.3	14	8.4	46	1.5	<17	<0.83	<0.83	<0.83	<50
AS/SVE-1-35	09/30/03	520	--	0.056 ^J	1.40	3.9	23	0.089 ^J	<5.9	<0.30	<0.30	<0.30	<18
AS/SVE-1-40	09/30/03	0.19 ^J	--	0.0021 ^J	0.010	0.013	0.083	0.051	0.23	<0.0058	<0.0058	<0.0058	<0.35
AS/SVE-1-45	09/30/03	1.0	--	0.11	0.051	0.076	0.32	0.0060	<0.044	<0.0044	<0.0044	<0.0044	<0.27
AS/SVE-1-50	09/30/03	0.59 ^J	--	0.15	0.011	0.095	0.28	0.097	0.11	0.0012 ^J	<0.0044	<0.0044	<0.26
AS/SVE-1-55	09/30/03	0.26 ^J	--	0.0014 ^J	0.0037	0.014	0.028	0.026	0.061	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-1-60	09/30/03	<1.0	--	<0.0020	0.0020	0.0017 ^J	0.011	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-1-65	09/30/03	2.9	--	0.23	0.53	0.21	1.2	0.14 ^J	<5.0	<0.25	<0.25	<0.25	<15
AS/SVE-1-70	09/30/03	<1.0	--	0.041	<0.0017	<0.0017	<0.00082 ^J	0.0059	<0.044	<0.0044	<0.0044	<0.0044	<0.26
AS/SVE-2-5	10/01/03	<1.0	--	<0.0020	<0.0020	<0.0020	<0.0040	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-2-10	10/01/03	<0.91	--	<0.0017	<0.0017	<0.0017	<0.0035	<0.0044	<0.044	<0.0044	<0.0044	<0.0044	<0.26
AS/SVE-2-15	10/01/03	0.14 ^J	--	0.00063 ^J	<0.0020	0.0011 ^J	0.0080	0.032	1.1	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-2-20	10/01/03	3.40	--	<0.12	<0.12	<0.12	<0.23	<0.29	12	<0.29	<0.29	<0.29	<17
AS/SVE-2-25	10/01/03	27 ^J	--	0.44	1.8	0.37	2.5	3.2	10	<0.22	<0.22	<0.22	<13
AS/SVE-2-30	10/01/03	43 ^J	--	2.1	9.0	2.0	11	11	6.4	<0.25	<0.25	0.13 ^J	<15
AS/SVE-2-35	10/01/03	2,500	--	1.5	40	65	300	0.54 ^J	<28	<1.4	<1.4	<1.4	<85
AS/SVE-2-40	10/01/03	3,100	--	0.42 ^J	21	51	290	<3.0	<60	<3.0	<3.0	<3.0	<180
AS/SVE-2-45	10/01/03	6,700	--	12	150	95	430	<2.5	<50	<2.5	<2.5	<2.5	<150
AS/SVE-2-50	10/01/03	25 ^J	--	2.2	6.6	1.4	8.3	0.57	<4.5	<0.23	<0.23	<0.23	<14
AS/SVE-2-55	10/01/03	11 ^J	--	0.32	0.046	0.17	0.58	0.21	0.73	0.0026 ^J	<0.0050	0.00088 ^J	<0.30
AS/SVE-2-60	10/01/03	<1.0	--	0.0029	0.0079	0.0040	0.022	0.0055	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-2-65	10/01/03	<1.0	--	0.0022	<0.0020	<0.0020	<0.0040	0.015	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-2-70	10/01/03	0.33 ^J	--	0.14	0.13	0.10	0.48	0.027	0.056	<0.0050	<0.0050	<0.0050	<0.30

TABLE 1
HISTORICAL SOIL ANALYTICAL RESULTS
ATLANTIC RICHFIELD COMPANY STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CA

EPA Method:		8015B		8260B									
Sample I.D.	Sample Date	TPHg mg/kg	TFH mg/kg	B mg/kg	T mg/kg	E mg/kg	X mg/kg	MTBE mg/kg	TBA mg/kg	DIPE mg/kg	ETBE mg/kg	TAME mg/kg	ETHANOL mg/kg
AS/SVE-3-5	10/04/03	500	--	0.22	<0.12	4.1	3.4	<0.30	<6.0	<0.30	<0.30	<0.30	<18
AS/SVE-3-10	10/04/03	0.48 ^J	--	0.053	<0.0016	0.047	0.053	<0.0040	0.013 ^J	<0.0040	<0.0040	<0.0040	<0.24
AS/SVE-3-15	10/04/03	0.31 ^J	--	0.0032	0.0059	0.0023	0.11	0.025	0.013 ^J	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-3-20	10/04/03	0.22 ^J	--	0.00060 ^J	0.0015 ^J	<0.0024	0.0030 ^J	0.0042 ^J	<0.060	<0.0060	<0.0060	<0.0060	<0.36
AS/SVE-3-25	10/04/03	80	--	1.6	3.8	0.59	3.3	0.45	<5.0	<0.25	<0.25	<0.25	<15
AS/SVE-3-30	10/04/03	<1.2	--	0.0025	0.011	0.0031	0.022	0.022	0.011 ^J	<0.0056	<0.0056	<0.0056	<0.34
AS/SVE-3-35	10/04/03	0.15 ^J	--	0.00087 ^J	0.0036	0.0013 ^J	0.0084	0.017	0.011 ^J	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-3-40	10/04/03	0.69 ^J	--	0.053	0.057	0.023	0.11	0.17	0.058	<0.0050	<0.0050	0.0010 ^J	<0.30
AS/SVE-3-45	10/04/03	0.56 ^J	--	0.036	0.014	0.024	0.10	<0.0039	<0.039	<0.0039	<0.0039	<0.0039	<0.23
AS/SVE-3-50	10/04/03	<43	--	0.48	0.75	0.18	0.57	0.061 ^J	<4.3	<0.21	<0.21	<0.21	<13
AS/SVE-3-55	10/04/03	1.4	--	0.14	0.16	0.093	0.45	0.16	0.081	0.00073 ^J	<0.0042	0.00073 ^J	<0.25
AS/SVE-3-60	10/04/03	0.35 ^J	--	0.024	0.020	0.015	0.059	<0.0050	0.022 ^J	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-3-65	10/04/03	<0.87	--	0.0029	<0.0020	<0.0020	0.0014 ^J	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-3-70	10/04/03	0.12 ^J	--	0.0051	0.0068	0.0027	0.011	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-4-5	09/30/03	0.79 ^J	--	<0.10	<0.10	0.075 ^J	0.86	<0.25	<5.0	<0.25	<0.25	<0.25	<15
AS/SVE-4-10	09/30/03	2,700	--	0.91 ^J	32	54	320	<2.5	<50	<2.5	<2.5	<2.5	<150
AS/SVE-4-15	09/30/03	3,100	--	1.4	45	41	220	<2.1	<43	<2.1	<2.1	<2.1	<130
AS/SVE-4-20	09/30/03	0.16 ^J	--	0.0012 ^J	0.023	0.022	0.14	0.0022	0.072	<0.0062	<0.0062	<0.0062	<0.37
AS/SVE-4-25	09/30/03	1,100	--	<0.46	8.9	15	84	<1.2	<23	<1.2	<1.2	<1.2	<69
AS/SVE-4-30	09/30/03	1.8	--	2.6	9.4	2.3	12	0.80	<8.9	<0.44	<0.44	<0.44	<27
AS/SVE-4-35	09/30/03	<1.1	--	0.011	0.026	0.0099	0.059	0.068	0.23	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-4-40	09/30/03	<1.1	--	<0.0024	<0.0024	<0.0024	0.0022 ^J	0.012	0.63	<0.0059	<0.0059	<0.0059	<0.36
AS/SVE-4-45	09/30/03	1.3	--	0.12	0.081	0.028	0.16	0.29	0.22	0.0011 ^J	<0.0050	0.0010 ^J	<0.30
AS/SVE-4-50	09/30/03	0.18 ^J	--	0.031	0.0041	0.0041	0.023	0.0011 ^J	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-4-55	09/30/03	0.56 ^J	--	0.085	0.0062	0.029	0.16	0.011	<0.050	0.00053 ^J	<0.0050	<0.0050	<0.30
AS/SVE-4-60	09/30/03	1.3	--	0.48	<0.090	0.16	0.45	0.058 ^J	<4.5	<0.23	<0.23	<0.23	<14
AS/SVE-4-65	09/30/03	<1.0	--	0.018	0.0035	0.0086	0.026	0.0019 ^J	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-4-70	09/30/03	0.29 ^J	--	0.0011 ^J	0.0014 ^J	0.0020	0.012	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-5	09/29/03	<1.2	--	<0.0023	<0.0023	<0.0023	<0.0046	<0.0057	<0.057	<0.0057	<0.0057	<0.0057	<0.34
AS/SVE-5-10	09/29/03	<0.90	--	<0.0020	<0.0020	<0.0020	<0.0040	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-15	09/29/03	<0.85	--	<0.0017	<0.0017	<0.0017	<0.0034	<0.0043	<0.043	<0.0043	<0.0043	<0.0043	<0.26
AS/SVE-5-20	09/29/03	<1.0	--	<0.0020	<0.0020	<0.0020	0.0014 ^J	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-25	09/29/03	<1.1	--	<0.0024	<0.0024	<0.0024	<0.0047	<0.0059	<0.059	<0.0059	<0.0059	<0.0059	<0.35
AS/SVE-5-30	09/29/03	<1.0	--	<0.0020	<0.0020	<0.0020	<0.0040	<0.0050	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-35	09/29/03	<1.0	--	0.00076 ^J	<0.0022	<0.0022	0.00089 ^J	0.0035 ^J	<0.056	<0.0056	<0.0056	<0.0056	<0.33
AS/SVE-5-40	09/29/03	<1.0	--	0.0011 ^J	<0.0020	0.0013 ^J	0.0026 ^J	0.0061	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-45	09/29/03	<1.0	--	0.0024	<0.0020	0.0038	0.0072	0.017	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-50	09/29/03	0.14 ^J	--	0.028	<0.0020	0.0063	0.013	0.0098	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-55	09/29/03	<1.0	--	0.00089 ^J	<0.0020	<0.0020	<0.0040	0.045	0.026 ^J	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-60	09/29/03	<1.0	--	0.0074	<0.0020	0.0038	<0.0040	0.079	0.060	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-65	09/29/03	0.28 ^J	--	0.19	0.011	0.027	0.039	0.0062	<0.050	<0.0050	<0.0050	<0.0050	<0.30
AS/SVE-5-70	09/29/03	<0.89	--	<0.0017	<0.0017	<0.0017	<0.0035	0.0024 ^J	<0.044	<0.0044	<0.0044	<0.0044	<0.26

Notes:

mg/kg- Milligrams per kilogram
TPHg - Total petroleum hydrocarbons as gasoline
TFH - Total fuel hydrocarbons
B - Benzene
T - Toluene
E - Ethylbenzene
X - Total xylenes
-- - Not Analyzed

TBA - Tertiary butanol
DIPE - Di-isopropyl ether
ETBE - Ethyl-tertiary-butyl ether
TAME - Tertiary-amyl-methyl ether
MTBE - Methyl-tertiary-butyl ether
J- estimated value: below the reporting limit and above the method detection limit
<0.0050 - Below reporting limit and method detection limit

TABLE 2
Summary of Groundwater Analytical & Elevation Results
ARCO Station No. 5110
5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
D-1	06/27/90		107.62	57.06	0.00	50.56	1,600	800	300	77	370	-	-	-	-	-	-	D-1	
	06/29/93			56.15	0.00	51.47	1,100	330	45	62	87	-	-	-	-	-	-	D-1	
	09/20/93			55.17	0.00	52.45	13,000	1,700	290	430	480	-	-	-	-	-	-	D-1	
	11/15/93			54.59	0.00	53.03	8,400	2,400	430	690	1,200	-	-	-	-	-	-	D-1	
	04/18/94			51.86	0.00	55.76	7,800	1,400	330	610	1,500	-	-	-	-	-	-	D-1	
	11/04/94			50.83	0.00	56.79	15,000	2,400	230	1,400	2,900	-	-	-	-	-	-	D-1	
	03/20/95			49.63	0.00	57.99	12,000	1,900	520	240	1,800	-	-	-	-	-	-	D-1	
	04/13/95			49.55	0.00	58.07	15,000	1,600	420	1,200	2,000	-	-	-	-	-	-	D-1	
	09/08/95			48.14	0.00	59.48	11,000	1,500	220	900	1,300	-	-	-	-	-	-	D-1	
	11/15/95			47.87	0.00	59.75	10,000	1,600	310	1,200	1,600	-	-	-	-	-	-	D-1	
	01/22/96			50.10	0.00	57.52	3,400	680	51	350	290	-	-	-	-	-	-	D-1	
	04/30/96			46.89	0.00	60.73	7,800	1,200	110	930	1,100	-	-	-	-	-	-	D-1	
	07/31/96	A		-	-	-	-	-	-	-	-	1,800	-	-	-	-	-	D-1	Method 8260
	07/31/96			46.76	0.00	60.86	14,000	1,900	580	1,200	2,600	3,300	-	-	-	-	-	D-1	
	11/22/96			46.64	0.00	60.98	12,000	1,500	2,100	620	3,100	790	-	-	-	-	-	D-1	
	03/14/97	A		-	-	-	-	-	-	-	-	780	-	-	-	-	-	D-1	Method 8260
	03/14/97			45.71	0.00	61.91	6,200	780	270	550	1,100	650	-	-	-	-	-	D-1	
	05/05/97			45.51	0.00	62.11	2,100	250	53	170	240	200	-	-	-	-	-	D-1	
	07/22/97	A		-	-	-	-	-	-	-	-	93	-	-	-	-	-	D-1	Method 8260
	07/22/97			45.52	0.00	62.10	870	130	2.2	98	95	120	-	-	-	-	-	D-1	
	10/10/97			45.68	0.00	61.94	70	8.0	0.78	5.4	9.5	<10	-	-	-	-	-	D-1	
	01/30/98	A		-	-	-	-	-	-	-	-	980	-	-	-	-	-	D-1	Method 8260
	01/30/98			45.35	0.00	62.27	10,000	1,300	350	910	2,600	770	-	-	-	-	-	D-1	
	06/05/98	A		-	-	-	-	-	-	-	-	790	-	-	-	-	-	D-1	Method 8260
	06/05/98			44.34	0.00	63.28	11,000	1,100	150	580	1,800	630	-	-	-	-	-	D-1	
	09/14/98	A		-	-	-	-	-	-	-	-	740	-	-	-	-	-	D-1	Method 8260
	09/14/98			43.70	0.00	63.92	11,000	1,100	150	690	1,700	770	-	-	-	-	-	D-1	
	12/18/98	A		-	-	-	-	-	-	-	-	1,100	-	-	-	-	-	D-1	Method 8260
	12/18/98			43.40	0.00	64.22	16,000	1,800	520	1,100	3,500	1,300	-	-	-	-	-	D-1	
	02/15/99	A		-	-	-	-	-	-	-	-	1,500	-	-	-	-	-	D-1	Method 8260
	02/15/99			43.45	0.00	64.17	23,000	2,700	810	1,600	5,300	1,900	-	-	-	-	-	D-1	
	05/12/99			43.35	0.00	64.27	18,000	2,200	440	1,300	3,300	1,600	-	-	-	-	-	D-1	
	09/29/99			43.24	0.00	64.38	13,000	2,000	1,200	970	3,400	1,900	-	-	-	-	-	D-1	
	09/29/99	DUP		-	-	-	13,000	2,100	1,300	1,000	3,400	1,900	-	-	-	-	-	MW-99	
	12/07/99			45.85	0.00	61.77	5,500	650	210	200	580	11,000	-	-	-	-	-	D-1	
	03/21/00		107.65	45.25	0.00	62.40	11,000	1,200	230	690	2,100	2,000	-	-	-	-	-	D-1	
	06/14/00			45.69	0.00	61.96	21,000	2,500	490	1,300	4,000	2,300	<1,000	<100	<100	<100	-	D-1	
	08/23/00			45.64	0.00	62.01	9,300	2,100	240	950	2,400	1,700	630 J	13 J	<100	12 J	-	D-1	
	12/08/00			46.70	0.00	60.95	3,800	490	44	240	500	540	200	3.1 J	<10	2.5 J	-	D-1	

TABLE 2
Summary of Groundwater Analytical & Elevation Results
ARCO Station No. 5110
5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
D-1	02/15/01		107.65	46.89	0.00	60.76	14,000	2,400	380	1,000	4,100	4,000	1,100	<50	<50	<50	-	D-1	
	06/14/01			46.98	0.00	60.67	340	25	<1.5	2.6	13	160	78	<5.0	<5.0	<5.0	-	D-1	
	09/14/01			47.64	0.00	60.01	250	9.7	4.0	2.2	4.3	180	76	1.6 J	<5.0	<5.0	-	D-1	
	12/07/01			48.04	0.00	59.61	7,700	1,800	330	630	1,700	1,100	600	5.4 J	<12	3.9 J	-	D-1	
	03/28/02	ABN		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

TABLE 2
Summary of Groundwater Analytical & Elevation Results
ARCO Station No. 5110
5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-A1	01/30/98		107.68	44.38	0.00	63.30	<50	<0.30	<0.30	<0.30	<0.60	<10	-	-	-	-	-	MW-A1	
	06/05/98			43.30	0.00	64.38	<50	<0.30	<0.30	<0.30	<0.60	<10	-	-	-	-	-	MW-A1	
	09/14/98			42.75	0.00	64.93	<50	<0.30	<0.30	<0.30	<0.60	<10	-	-	-	-	-	MW-A1	
	12/18/98			42.65	0.00	65.03	<50	<0.30	<0.30	<0.30	0.93	<10	-	-	-	-	-	MW-A1	
	02/15/99			42.80	0.00	64.88	64	1.0	8.3	1.7	11	<10	-	-	-	-	-	MW-A1	
	05/12/99			42.90	0.00	64.78	<50	<0.3	<0.3	<0.3	<0.6	<10	-	-	-	-	-	MW-A1	
	09/29/99			43.95	0.00	63.73	<50	<2.0	<2.0	<2.0	<4.0	<5.0	-	-	-	-	-	MW-A1	
	12/07/99			44.45	0.00	63.23	<50	<2.0	<2.0	<2.0	<4.0	<5.0	-	-	-	-	-	MW-A1	
	03/21/00		105.52	44.47	0.00	61.05	<50	<2.0	<2.0	<2.0	<4.0	<5.0	-	-	-	-	-	MW-A1	
	06/14/00	INA		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Paved over
	08/23/00	INA		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Paved over
	12/08/00			46.30	0.00	59.22	50	1.5	<0.30	0.33	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A1	
	02/15/01			46.45	0.00	59.07	<50	<0.30	<0.30	<0.30	0.99	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A1	
	06/14/01			46.65	0.00	58.87	<50	<0.30	<0.30	0.50	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A1	
	09/14/01			47.25	0.00	58.27	22 J	<0.30	0.23 J	0.32	0.54 J	4.9 J	5.8 J	<5.0	<5.0	<5.0	-	MW-A1	
	12/07/01			47.68	0.00	57.84	<100	<5.0	<5.0	<5.0	1.1 J	8.0	9.5 J	<5.0	<5.0	<5.0	-	MW-A1	
	03/28/02			47.71	0.00	57.81	<100	<5.0	<5.0	<5.0	<5.0	19	15 J	<5.0	<5.0	<5.0	-	MW-A1	
	06/06/02		107.69	47.93	0.00	59.76	30 J	<2.0	<2.0	<2.0	<4.0	11	20 J	<5.0	<5.0	<5.0	-	MW-A1	
	09/05/02			48.75	0.00	58.94	28 J	<2.0	<2.0	<2.0	<4.0	18	21 J	<5.0	<5.0	<5.0	-	MW-A1	
	12/05/02			49.35	0.00	58.34	50	<2.0	<2.0	<2.0	<4.0	18	28 J	<5.0	<5.0	<5.0	-	MW-A1	
	02/18/03			49.61	0.00	58.08	23 J	<2.0	<2.0	<2.0	<4.0	12	17 J	0.91 J	<5.0	<5.0	<150	MW-A1	
	05/19/03			49.71	0.00	57.98	29 J	<2.0	<2.0	<2.0	<4.0	14	20 J	1.6 J	<5.0	<5.0	<150	MW-A1	
	08/19/03			49.98	0.00	57.71	<50	<2.0	<2.0	<2.0	<4.0	7.2	7.5 J	1.0 J	<5.0	<5.0	<150	MW-A1	
	11/18/03			50.42	0.00	57.27	26 J	<2.0	<2.0	<2.0	<4.0	4.8 J	6.5 J	0.58 J	<5.0	<5.0	<150	MW-A1	
	02/24/04			50.70	0.00	56.99	<50	<2.0	<2.0	<2.0	<4.0	2.7 J	5.4 J	0.69 J	<5.0	<5.0	<150	MW-A1	
	05/25/04			51.01	0.00	56.68	<50	0.94 J	<2.0	<2.0	<4.0	4.1 J	<50	0.56 J	<5.0	<5.0	<150	MW-A1	
	08/24/04			51.57	0.00	56.12	25 J	1.4 J	0.55 J	0.26 J	0.74 J	2.0 J	<50	0.39 J	<5.0	<5.0	<150	MW-A1	
	11/16/04			52.18	0.00	55.51	<50	4.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	MW-A1	

TABLE 2
Summary of Groundwater Analytical & Elevation Results
ARCO Station No. 5110
5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-A2	01/30/98		107.91	41.76	0.00	66.15	390	15	3.0	1.6	3.2	<10	-	-	-	-	-	MW-A2	
	06/05/98			38.90	0.00	69.01	190	7.8	<0.30	1.3	3.4	13	-	-	-	-	-	MW-A2	
	09/14/98			38.90	0.00	69.01	220	12	0.68	1.3	2.2	<10	-	-	-	-	-	MW-A2	
	12/18/98			37.30	0.00	70.61	250	9.7	1.4	1.4	2.5	<20	-	-	-	-	-	MW-A2	
	02/15/99			36.85	0.00	71.06	350	15	6.6	2.9	12	12	-	-	-	-	-	MW-A2	
	05/12/99			36.45	0.00	71.46	310	7.5	1.5	0.93	2.1	<10	-	-	-	-	-	MW-A2	
	09/29/99			36.57	0.00	71.34	<50	7.6	<2.0	<2.0	<4.0	<10	-	-	-	-	-	MW-A2	
	12/07/99			39.61	0.00	68.30	98	4.9	<2.0	<2.0	<4.0	<5.0	-	-	-	-	-	MW-A2	
	03/21/00		105.25	37.37	0.00	67.88	84	3.9	<2.0	<2.0	<4.0	<5.0	-	-	-	-	-	MW-A2	
	06/14/00			37.95	0.00	67.30	50	2.8	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	08/23/00			38.04	0.00	67.21	<500	2.6	0.34 J	0.42 J	1.2 J	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	12/08/00			38.95	0.00	66.30	77	2.3	0.70	0.52	1.6	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	02/15/01			46.42	0.00	58.83	<50	1.2	<0.30	<0.30	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	06/14/01			39.45	0.00	65.80	<50	0.66	<0.30	<0.30	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	09/14/01			40.86	0.00	64.39	24 J	0.35	0.63	0.15 J	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	12/07/01			44.18	0.00	61.07	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	03/28/02			45.36	0.00	59.89	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	-	MW-A2	
	03/28/02	DUP	107.40	-	-	-	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	-	MW-99	
	06/06/02			43.87	0.00	63.53	53	<2.0	0.26 J	<2.0	0.38 J	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	06/06/02	DUP		-	-	-	12 J	<2.0	0.14 J	<2.0	0.22 J	<5.0	<50	<5.0	<5.0	<5.0	-	MW-99	
	09/05/02			51.20	0.00	56.20	11 J	<2.0	<2.0	<2.0	0.19 J	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A2	
	12/05/02			45.85	0.00	61.55	34 J	13	<2.0	4.9	0.55 J	2.9 J	2.0 J	<5.0	<5.0	<5.0	-	MW-A2	
	02/18/03			47.68	0.00	59.72	26 J	5.6	<2.0	2.3	<4.0	0.72 J	<50	<5.0	<5.0	<5.0	<150	MW-A2	
	05/19/03			48.51	0.00	58.89	97	19	0.61 J	12	<4.0	1.8 J	<50	<5.0	<5.0	<5.0	<150	MW-A2	
	08/19/03			49.05	0.00	58.35	57	13	0.41 J	5.4	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	MW-A2	
	11/18/03			49.46	0.00	57.94	740	270	25	72	21	1.2 J	<50	<5.0	<5.0	<5.0	<150	MW-A2	
	02/24/04			49.85	0.00	57.55	2,700	920	34	200	150	<50	<500	<50	<50	<50	<1,500	MW-A2	
	05/25/04			50.13	0.00	57.27	7,000	2,100	460	420	990	<200	<2,000	<200	<200	<200	<6,000	MW-A2	
	08/24/04			51.03	0.00	56.37	4,300	1,500	260	230	440	<200	<2,000	<200	<200	<200	<6,000	MW-A2	
	11/16/04			51.43	0.00	55.97	2,200	330	46	61	130	<20	<200	<20	<20	<20	<600	MW-A2	

TABLE 2
Summary of Groundwater Analytical & Elevation Results
ARCO Station No. 5110
5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-A3	12/07/99		106.00	44.72	0.00	61.28	16,000	2,900	510	1,000	3,800	390	-	-	-	-	-	MW-A3	
	03/21/00		106.76	45.15	0.00	61.61	9,000	3,000	550	810	2,000	180	-	-	-	-	-	MW-A3	
	06/14/00			45.39	0.00	61.37	1,500	190	14	53	210	44	130	<10	<10	<10	-	MW-A3	
	08/23/00			45.17	0.00	61.59	2,500	460	25	230	99	28	25 J	3.6 J	<25	<25	-	MW-A3	
	08/23/00	DUP		-	-	-	3,000	470	42	220	160	32	32 J	3.3 J	<20	<20	-	MW-99	
	12/08/00			46.04	0.00	60.72	3,000	410	20	150	270	27	20 J	2.3 J	<5.0	<5.0	-	MW-A3	
	02/15/01			46.20	0.00	60.56	2,800	690	14	300	120	39	<50	<5.0	<5.0	<5.0	-	MW-A3	
	06/14/01			46.37	0.00	60.39	2,800	720	<6.0	350	58	42	<50	<5.0	<5.0	<5.0	-	MW-A3	
	09/14/01			46.99	0.00	59.77	4,200	1,300	36	340	510	43	20 J	2.4 J	<5.0	<5.0	-	MW-A3	
	12/07/01			47.46	0.00	59.30	7,700	2,900	51 J	730	1,100	62	18 J	3.0 J	<5.0	<5.0	-	MW-A3	
	03/28/02		108.97	47.75	0.00	61.22	4,200	1,800	<50	420	250	75	21 J	2.8 J	<5.0	<5.0	-	MW-A3	
	06/06/02			47.98	0.00	60.99	5,100	1,900	7.1	500	380	50	54	2.2 J	<5.0	<5.0	-	MW-A3	
	09/05/02			48.75	0.00	60.22	2,800	1,100	10	240	560	120	34 J	<20	<20	<20	-	MW-A3	
	12/05/02			49.47	0.00	59.50	4,200	1,600	3.4 J	670	180	200	51 J	3.6 J	<20	<20	-	MW-A3	
	02/18/03			49.66	0.00	59.31	6,500	1,300	<2.0	660	280	320	100 J	<50	<50	<50	<1,500	MW-A3	
	05/19/03			49.81	0.00	59.16	3,100	910	<20	74	58	240	54 J	<50	<50	<50	<1,500	MW-A3	
	08/19/03			50.04	0.00	58.93	4,700	1,400	<40	260	390	300	<1,000	6.8 J	<100	<100	<3,000	MW-A3	
	11/18/03			50.93	0.00	58.04	4,000	1,300	<40	280	460	280	170 J	12 J	<100	<100	<3,000	MW-A3	
	02/24/04			50.84	0.00	58.13	11,000	3,700	<50	330	800	500	400 J	24 J	<120	<120	<3,800	MW-A3	
	02/24/04	DUP		-	-	-	12,000	3,800	<100	310	760	520	380 J	25 J	<250	<250	<7,500	Dup-5110-20040224	
	05/25/04			51.17	0.00	57.80	7,900	3,700	<50	210	370	520	520 J	23 J	<120	<120	<3,800	MW-A3	
	05/25/04	DUP		-	-	-	7,400	2,800	<100	160	270	430	380 J	18 J	<250	<250	<7,500	Dup-5110-20040525	
	08/24/04			51.67	0.00	57.30	9,600	4,000	<50	150	200	720	570 J	23 J	<120	<120	<3,800	MW-A3	
	08/24/04	DUP		-	-	-	9,100	1,900	<100	78 J	98 J	320	290 J	<250	<250	<250	<7,500	DUP-5110-20040824	
	11/16/04			50.81	0.00	58.16	7,000	2,900	<80	<80	<160	570	<2,000	<200	<200	<200	<6,000	MW-A3	
	11/16/04	DUP		-	-	-	4,900	2,300	<40	<40	<80	520	<1,000	<100	<100	<100	<3,000	DUP-5110-20041116	

TABLE 2
Summary of Groundwater Analytical & Elevation Results
ARCO Station No. 5110
5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-A4	12/07/99		108.48	45.57	0.00	62.91	36,000	6,500	8,400	1,400	4,900	<500	-	-	-	-	-	MW-A4	
	03/21/00		108.56	46.00	0.00	62.56	28,000	7,400	9,800	1,500	4,200	<500	-	-	-	-	-	MW-A4	
	03/21/00	DUP		-	-	-	34,000	7,200	9,700	1,400	4,200	<500	-	-	-	-	-	MW-99	
	06/14/00			46.45	0.00	62.11	44,000	8,600	11,000	1,700	6,100	<400	<4,000	<400	<400	<400	-	MW-A4	
	06/14/00	DUP		-	-	-	42,000	9,000	12,000	1,800	6,500	<400	<4,000	<400	<400	<400	-	MW-99	
	08/23/00			46.11	0.00	62.45	49,000	9,000	13,000	1,700	6,300	20 J	<4,000	<400	<400	<400	-	MW-A4	
	12/08/00			47.50	0.00	61.06	45,000	7,900	8,500	1,500	5,000	<20	86 J	<20	<20	<20	-	MW-A4	
	12/08/00	DUP		-	-	-	46,000	8,200	9,000	1,600	5,500	1.1 J	110	<5.0	<5.0	<5.0	-	MW-99	
	02/15/01			47.66	0.00	60.90	22,000	5,500	4,100	440	3,100	<20	<200	<20	<20	<20	-	MW-A4	
	02/15/01	DUP		-	-	-	23,000	5,300	4,000	120	3,600	<5.0	<50	<5.0	<5.0	<5.0	-	MW-99	
	06/14/01			47.78	0.00	60.78	29,000	7,200	4,800	1,600	4,800	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A4	
	06/14/01	DUP		-	-	-	29,000	6,600	4,400	1,500	4,400	<5.0	<50	<5.0	<5.0	<5.0	-	MW-99	
	09/14/01			48.38	0.00	60.18	33,000	7,700	7,100	1,700	4,900	<20	<200	<20	<20	<20	-	MW-A4	
	09/14/01	DUP		-	-	-	33,000	6,600	6,100	1,500	4,200	<5.0	54	<5.0	<5.0	<5.0	-	MW-99	
	12/07/01			48.85	0.00	59.71	21,000	5,200	2,800	800 J	3,100	<5.0	94	<5.0	<5.0	<5.0	-	MW-A4	
	12/07/01	DUP		-	-	-	24,000	5,200	3,000	790 J	3,200	<5.0	110	<5.0	<5.0	<5.0	-	MW-99	
	03/28/02			49.10	0.00	59.46	12,000	5,000	640	1,300	1,200	<20	47 J	<20	<20	<20	-	MW-A4	
	06/06/02		110.71	49.30	0.00	61.41	20,000	5,200	1,400	1,200	2,000	<20	56 J	<20	<20	<20	-	MW-A4	
	09/05/02			50.07	0.00	60.64	14,000	5,000	920	910	2,000	<50	<500	<50	<50	<50	-	MW-A4	
	09/05/02	DUP		-	-	-	11,000	3,500	320	740	570	0.31 J	46 J	<5.0	<5.0	<5.0	-	MW-99	
	12/05/02			50.12	0.00	60.59	11,000	3,200	420	480	1,000	<25	51 J	<25	<25	<25	-	MW-A4	
	12/05/02	DUP		-	-	-	10,000	2,300	310	460	840	<25	59 J	<25	<25	<25	-	MW-99	
	02/18/03			59.99	0.00	50.72	21,000	3,500	510	800	2,300	<100	<1,000	<100	<100	<100	<3,000	MW-A4	
	02/18/03	DUP		-	-	-	36,000	7,100	1,200	1,600	5,600	<500	<5,000	<500	<500	<500	<15,000	MW-99	
	05/19/03			51.13	0.00	59.58	23,000	5,400	1,300	1,200	3,800	<500	<5,000	<500	<500	<500	<15,000	MW-A4	
	05/19/03	DUP		-	-	-	21,000	5,000	1,200	1,000	3,400	<500	<5,000	<500	<500	42 J	<15,000	MW-99	
	08/19/03			61.33	0.00	49.38	11,000	4,400	490	950	2,600	<250	<2,500	<250	<250	<250	<7,500	MW-A4	
	08/19/03	DUP		-	-	-	16,000	5,000	540	960	2,700	<500	<5,000	<500	<500	<500	<15,000	MW-99	
	11/18/03			51.84	0.00	58.87	16,000	4,500	1,600	880	3,000	<250	<2,500	<250	<250	<250	<7,500	MW-A4	
	11/18/03	DUP		-	-	-	12,000	4,500	1,700	910	3,000	<200	220 J	<200	<200	<200	<6,000	Dup-5110-20031118	
	02/24/04			52.00	0.00	58.71	9,900	4,000	670	650	1,500	<250	<2,500	<250	<250	<250	<7,500	MW-A4	
	05/25/04			52.37	0.00	58.34	22,000	8,400	1,900	1,500	4,500	<250	<2,500	<250	<250	<250	<7,500	MW-A4	
	08/24/04			52.26	0.00	58.45	20,000	7,000	1,200	1,100	2,700	<250	<2,500	<250	<250	<250	<7,500	MW-A4	
	11/16/04			53.44	0.00	57.27	24,000	7,400	980	1,100	2,700	<500	<5,000	<500	<500	<500	<15,000	MW-A4	

TABLE 2
Summary of Groundwater Analytical & Elevation Results
ARCO Station No. 5110
5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-A5	12/07/01		105.72	47.11	0.00	58.61	<100	1.4 J	<5.0	<5.0	<5.0	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A5	
	03/28/02			47.36	0.00	58.36	110	<5.0	<5.0	1.1 J	2.4 J	<5.0	<25	<5.0	<5.0	<5.0	-	MW-A5	
	06/06/02		107.91	47.52	0.00	60.39	23 J	<2.0	<2.0	0.19 J	0.47 J	0.30 J	<50	<5.0	<5.0	<5.0	-	MW-A5	
	09/05/02			48.37	0.00	59.54	120	<2.0	<2.0	0.35 J	0.43 J	<5.0	<50	<5.0	<5.0	<5.0	-	MW-A5	
	12/05/02			49.05	0.00	58.86	60	<2.0	<2.0	<2.0	<4.0	0.58 J	8.4 J	<5.0	<5.0	<5.0	-	MW-A5	
	02/18/03			49.06	0.00	58.85	300	1.9 J	<2.0	5.8	31	27	15 J	1.6 J	<5.0	<5.0	<150	MW-A5	
	05/19/03			49.41	0.00	58.50	680	35	<10	59	300	100	97 J	7.8 J	<25	<25	<750	MW-A5	
	08/19/03			49.70	0.00	58.21	260	3.9	0.38 J	1.9 J	62	73	61	4.1 J	<5.0	<5.0	<150	MW-A5	
	11/18/03			50.15	0.00	57.76	420	6.4	1.0 J	4.4	140	140	180	7.3	<5.0	<5.0	<150	MW-A5	
	02/24/04			50.43	0.00	57.48	660	16	1.8 J	16	220	160	310	10	<10	<10	<300	MW-A5	
	05/25/04			50.74	0.00	57.17	1,000	26	1.6 J	22	190	290	440	14	<10	<10	<300	MW-A5	
	08/24/04			51.30	0.00	56.61	1,000	74	16	37	250	290	770	15	<10	<10	<300	MW-A5	
	11/16/04			51.90	0.00	56.01	2,400	180	<8.0	93	660	370	790	<20	<20	<20	<600	MW-A5	
MW-A6	12/07/01		105.78	46.86	0.00	58.92	150	59	<5.0	<5.0	<5.0	<5.0	18 J	<5.0	<5.0	<5.0	-	MW-A6	
	03/28/02			47.06	0.00	58.72	58 J	31	<5.0	<5.0	<5.0	<5.0	10 J	<5.0	<5.0	<5.0	-	MW-A6	
	06/06/02		107.90	47.26	0.00	60.64	77	30	<2.0	0.18 J	0.31 J	<5.0	18 J	<5.0	<5.0	<5.0	-	MW-A6	
	09/05/02			48.20	0.00	59.70	74	22	<2.0	<2.0	<4.0	<5.0	23 J	<5.0	<5.0	<5.0	-	MW-A6	
	12/05/02			48.75	0.00	59.15	78	28	<2.0	<2.0	<4.0	<5.0	18 J	<5.0	<5.0	<5.0	-	MW-A6	
	02/18/03			47.85	0.00	60.05	60	13	<2.0	<2.0	<4.0	<5.0	26 J	<5.0	<5.0	<5.0	<150	MW-A6	
	05/19/03			48.98	0.00	58.92	66	25	<2.0	<2.0	<4.0	<5.0	15 J	<5.0	<5.0	<5.0	<150	MW-A6	
	08/19/03			49.21	0.00	58.69	56	24	<2.0	<2.0	<4.0	<5.0	12 J	<5.0	<5.0	<5.0	<150	MW-A6	
	11/18/03			49.62	0.00	58.28	59	17	<2.0	<2.0	<4.0	<5.0	11 J	<5.0	<5.0	<5.0	<150	MW-A6	
	02/24/04			49.91	0.00	57.99	58	20	<2.0	<2.0	<4.0	<5.0	13 J	<5.0	<5.0	<5.0	<150	MW-A6	
	05/25/04			50.25	0.00	57.65	62	19	<2.0	<2.0	<4.0	<5.0	8.2 J	<5.0	<5.0	<5.0	<150	MW-A6	
	08/24/04			50.87	0.00	57.03	94	24	0.39 J	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	MW-A6	
	11/16/04			51.44	0.00	56.46	67	21	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	MW-A6	
MW-A7	06/06/02		110.63	49.32	0.00	61.31	55,000	3,500	6,300	2,400	13,000	1,700	1,200	7.1	<5.0	<5.0	-	MW-A7	
	09/05/02			50.12	0.00	60.51	37,000	3,300	3,800	2,400	13,000	2,400	670	<50	<50	16 J	-	MW-A7	
	12/05/02			50.85	0.00	59.78	19,000	2,900	46	1,600	9,100	1,500	630 J	<100	<100	7.4 J	-	MW-A7	
	02/18/03			51.00	0.00	59.63	19,000	2,600	21 J	1,000	4,000	670	400 J	<200	<200	<200	<6,000	MW-A7	
	05/19/03			51.15	0.00	59.48	18,000	2,800	42 J	1,400	6,500	1,700	300 J	<200	<200	<200	<6,000	MW-A7	
	08/19/03			51.37	0.00	59.26	14,000	3,000	<80	1,200	2,400	1,800	530 J	<200	<200	<200	<6,000	MW-A7	
	11/18/03			51.85	0.00	58.78	7,500	1,800	<80	1,200	440	1,700	640 J	<200	<200	<200	<6,000	MW-A7	
	02/24/04			52.07	0.00	58.56	5,800	4,100	15 J	640	210	190 J	<2,000	<200	<200	<200	<6,000	MW-A7	
	05/25/04			52.38	0.00	58.25	4,200	1,800	<80	470	47 J	550	320 J	<200	<200	<200	<6,000	MW-A7	
	08/24/04			52.80	0.00	57.83	4,100	1,600	<80	80	<160	730	890 J	11 J	<200	<200	<6,000	MW-A7	
	11/16/04			53.63	0.00	57.00	2,100	980	<40	<40	<80	210	<1,000	<100	<100	<100	<3,000	MW-A7	

TABLE 2
Summary of Groundwater Analytical & Elevation Results
ARCO Station No. 5110
5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-19	06/26/90		107.07	57.21	0.00	49.86	700	140	<10	<10	<10	-	-	-	-	-	-	MW-19	
	06/29/93			55.37	0.00	51.70	870	100	0.90	65	18	-	-	-	-	-	-	MW-19	
	09/20/93			54.48	0.00	52.59	2,100	91	4.1	51	27	-	-	-	-	-	-	MW-19	
	11/15/93			53.99	0.00	53.08	1,100	65	0.80	20	23	-	-	-	-	-	-	MW-19	
	04/18/94			51.38	0.00	55.69	1,200	38	4.0	5.0	3.0	-	-	-	-	-	-	MW-19	
	11/04/94			50.37	0.00	56.70	490	7.0	<0.3	<0.3	<0.5	-	-	-	-	-	-	MW-19	
	03/20/95			49.05	0.00	58.02	240	1.3	<0.30	<0.30	<0.60	-	-	-	-	-	-	MW-19	
	04/13/95			48.90	0.00	58.17	230	2.1	<0.30	<0.30	<0.60	-	-	-	-	-	-	MW-19	
	09/08/95			48.63	0.00	58.44	250	8.1	<0.30	<0.30	<0.60	-	-	-	-	-	-	MW-19	
	11/15/95			47.33	0.00	59.74	350	7.2	0.34	0.51	<0.60	-	-	-	-	-	-	MW-19	
	01/22/96			49.53	0.00	57.54	250	5.4	<0.30	29	10	-	-	-	-	-	-	MW-19	
	04/30/96			46.35	0.00	60.72	250	5.1	<0.30	<0.30	<0.60	-	-	-	-	-	-	MW-19	
	07/31/96			46.24	0.00	60.83	530	7.4	2.2	0.93	68	<10	-	-	-	-	-	MW-19	
	11/22/96			46.11	0.00	60.96	350	1.2	0.39	<0.30	<0.60	<10	-	-	-	-	-	MW-19	
	03/14/97			45.12	0.00	61.95	260	32	1.4	<0.30	2.0	44	-	-	-	-	-	MW-19	
	05/05/97			44.93	0.00	62.14	190	3.1	<0.30	<0.30	0.86	<10	-	-	-	-	-	MW-19	
	07/22/97			44.83	0.00	62.24	270	16	0.71	<0.30	1.9	<10	-	-	-	-	-	MW-19	
	10/10/97			45.05	0.00	62.02	520	29	0.85	0.41	3.7	34	-	-	-	-	-	MW-19	
	01/30/98			44.75	0.00	62.32	630	31	3.3	0.59	8.2	<10	-	-	-	-	-	MW-19	
	06/05/98			43.75	0.00	63.32	1,700	230	7.5	73	66	40	-	-	-	-	-	MW-19	
	09/14/98			43.35	0.00	63.72	3,600	780	120	55	81	<100	-	-	-	-	-	MW-19	
	12/18/98			42.60	0.00	64.47	15,000	3,700	3,500	500	1,800	<1,000	-	-	-	-	-	MW-19	
	02/15/99			42.20	0.00	64.87	14,000	3,300	2,800	480	1,600	<1,000	-	-	-	-	-	MW-19	
	05/12/99			41.65	0.00	65.42	18,000	3,300	2,700	600	2,100	<2,000	-	-	-	-	-	MW-19	
	09/21/99	A		-	-	-	-	4,800	4,800	870	3,200	410	-	-	-	-	-	MW-19	Method 8260
	09/21/99			41.58	0.00	65.49	14,000	4,400	4,400	800	2,900	<1,000	-	-	-	-	-	MW-19	
	12/07/99			39.61	0.00	67.46	23,000	3,900	3,800	780	2,800	<250	-	-	-	-	-	MW-19	
	12/07/99	DUP		-	-	-	20,000	3,800	3,700	770	2,800	<250	-	-	-	-	-	MW-99	
	03/21/00		107.12	43.38	0.00	63.74	52,000	7,900	6,800	1,300	5,200	<100	-	-	-	-	-	MW-19	
	06/14/00			43.60	0.00	63.52	39,000	8,700	7,500	1,900	7,400	<250	<2,500	<250	<250	<250	-	MW-19	
	08/23/00			44.01	0.00	63.11	29,000	9,300	970	2,000	4,900	21 J	<4,000	<400	<400	<400	-	MW-19	

TABLE 2
Summary of Groundwater Analytical & Elevation Results
ARCO Station No. 5110
5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-19	12/08/00		107.12	44.45	0.00	62.67	27,000	6,800	230	1,300	3,200	7.7 J	85 J	<20	<20	<20	-	MW-19	
	02/15/01			45.68	0.00	61.44	12,000	3,800	570	610	1,300	<20	<200	<20	<20	<20	-	MW-19	
	06/14/01			45.58	0.00	61.54	8,100	2,400	250	390	870	25	<200	<20	<20	<20	-	MW-19	
	09/14/01			46.59	0.00	60.53	10,000	3,000	34	800	400	15 J	<200	<20	<20	<20	-	MW-19	
	12/07/01			46.88	0.00	60.24	11,000	3,400	<500	980	210 J	14 J	<500	<50	<50	<50	-	MW-19	
	03/28/02			47.48	0.00	59.64	7,600	2,500	<250	840	140 J	9.0 J	28 J	<10	<10	<10	-	MW-19	
	06/06/02		109.25	47.74	0.00	61.51	7,700	1,800	2.1 J	720	20	8.4 J	<100	<10	<10	<10	-	MW-19	
	09/05/02			48.65	0.00	60.60	2,500	770	1.0 J	240	1.9 J	9.7 J	36 J	<10	<10	<10	-	MW-19	
	12/05/02			49.30	0.00	59.95	480	270	<2.0	23	<4.0	8.0	68	<5.0	<5.0	<5.0	-	MW-19	
	02/18/03			49.61	0.00	59.64	310	39	<2.0	3.1	<4.0	6.8	87	<5.0	<5.0	<5.0	<150	MW-19	
	05/19/03			49.63	0.00	59.62	120	4.2	<2.0	3.9	0.59 J	7.7	86	<5.0	<5.0	<5.0	<150	MW-19	
	08/19/03			49.85	0.00	59.40	140	8.2	<2.0	0.87 J	4.3	4.2 J	70	<5.0	<5.0	<5.0	<150	MW-19	
	11/18/03			50.41	0.00	58.84	80	4.4	<2.0	0.47 J	<4.0	2.5 J	52	<5.0	<5.0	<5.0	<150	MW-19	
	02/24/04			50.27	0.00	58.98	140	6.8	0.53 J	0.99 J	0.95 J	3.0 J	35 J	<5.0	<5.0	<5.0	<150	MW-19	
	05/25/04			50.90	0.00	58.35	76	9.9	0.51 J	0.65 J	0.58 J	2.2 J	36	<5.0	<5.0	<5.0	<150	MW-19	
	08/24/04			51.38	0.00	57.87	100	12	0.58 J	1.2 J	1.5 J	1.9 J	22 J	<5.0	<5.0	<5.0	<150	MW-19	
	11/16/04	NS		51.81	0.00	57.44	-	-	-	-	-	-	-	-	-	-	-	-	
	11/17/04			-	-	-	99	6.4	<2.0	0.50 J	<4.0	3.4 J	22 J	0.25 J	<5.0	<5.0	<150	MW-19	

TABLE 2
Summary of Groundwater Analytical & Elevation Results
ARCO Station No. 5110
5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-20	06/26/90		106.37	56.65	0.00	49.72	400	10	<2	<2	22	-	-	-	-	-	-	MW-20	
	06/29/93			54.95	0.00	51.42	1,400	240	41	37	120	-	-	-	-	-	-	MW-20	
	09/20/93			54.17	0.00	52.20	2,500	440	160	74	240	-	-	-	-	-	-	MW-20	
	11/15/93			53.57	0.00	52.80	500	41	120	6.0	15	-	-	-	-	-	-	MW-20	
	04/18/94			52.47	0.00	53.90	720	90	49	23	81	-	-	-	-	-	-	MW-20	
	11/04/94			49.97	0.00	56.40	4,900	1,200	72	430	870	-	-	-	-	-	-	MW-20	
	03/20/95			48.76	0.00	57.61	1,600	330	12	46	150	-	-	-	-	-	-	MW-20	
	04/13/95			48.49	0.00	57.88	6,100	1,100	18	350	580	-	-	-	-	-	-	MW-20	
	09/08/95			47.42	0.00	58.95	5,300	1,500	15	420	650	-	-	-	-	-	-	MW-20	
	11/15/95			47.12	0.00	59.25	6,300	230	6.8	370	540	-	-	-	-	-	-	MW-20	
	01/22/96			49.31	0.00	57.06	1,900	430	<3.0	220	370	-	-	-	-	-	-	MW-20	
	04/30/96			46.10	0.00	60.27	3,100	630	<6.0	560	560	-	-	-	-	-	-	MW-20	
	07/31/96			46.10	0.00	60.27	1,500	200	1.9	140	240	43	-	-	-	-	-	MW-20	
	11/22/96			45.93	0.00	60.44	1,800	280	3.4	230	310	<10	-	-	-	-	-	MW-20	
	03/14/97			44.91	0.00	61.46	2,800	350	<3.0	340	500	<10	-	-	-	-	-	MW-20	
	05/05/97			44.55	0.00	61.82	1,700	130	1.7	220	130	64	-	-	-	-	-	MW-20	
	07/22/97			44.70	0.00	61.67	960	130	1.8	120	160	<25	-	-	-	-	-	MW-20	
	10/10/97	A		-	-	-	-	-	-	-	-	16	-	-	-	-	-	MW-20	Method 8260
	10/10/97			44.88	0.00	61.49	4,500	730	<5.1	580	750	96	-	-	-	-	-	MW-20	
	01/30/98			44.46	0.00	61.91	1,600	310	17	160	100	<20	-	-	-	-	-	MW-20	
	06/05/98			43.35	0.00	63.02	830	67	3.7	1.6	5.8	48	-	-	-	-	-	MW-20	
	09/14/98			42.35	0.00	64.02	1,400	170	13	52	140	<50	-	-	-	-	-	MW-20	
	12/18/98			42.45	0.00	63.92	580	52	5.3	25	31	33	-	-	-	-	-	MW-20	
	02/15/99			42.35	0.00	64.02	480	39	3.0	24	19	23	-	-	-	-	-	MW-20	
	05/12/99			42.65	0.00	63.72	170	22	3.2	16	8.5	<10	-	-	-	-	-	MW-20	
	09/21/99	A		-	-	-	-	22	<2.0	<2.0	<4.0	6.5	-	-	-	-	-	MW-20	Method 8260
	09/21/99			43.29	0.00	63.08	200	18	<0.30	1.3	0.95	<10	-	-	-	-	-	MW-20	
	12/07/99			43.76	0.00	62.61	220	16	<2.0	2.7	<4.0	10	-	-	-	-	-	MW-20	
	03/21/00		106.44	44.14	0.00	62.30	170	18	<1.0	0.46 J	<1.0	11	-	-	-	-	-	MW-20	
	06/14/00			44.54	0.00	61.90	110	37	<2.0	3.1	<4.0	20	<50	<5.0	<5.0	<5.0	-	MW-20	
	08/23/00			44.19	0.00	62.25	58	6.8	0.31 J	3.4	5.0	59	82	1.7 J	<5.0	<5.0	-	MW-20	
	12/08/00			45.67	0.00	60.77	7,200	980	96	450	980	190	360	4.3 J	<5.0	<5.0	-	MW-20	
	02/15/01			45.85	0.00	60.59	2,700	510	26	52	370	99	120	<5.0	<5.0	<5.0	-	MW-20	
	06/14/01			46.02	0.00	60.42	14,000	2,500	<60	830	1,700	700	<500	<50	<50	<50	-	MW-20	
	09/14/01			46.75	0.00	59.69	7,700	1,600	16	650	980	1,000	330	6.2 J	<12	9.0 J	-	MW-20	
	12/07/01			47.12	0.00	59.32	14,000	3,100	<500	1,500	2,100	1,500	940	6.0 J	<20	7.0 J	-	MW-20	
	03/28/02			47.59	0.00	58.85	8,100	1,600	<250	750	650	1,500	350	<20	<20	<20	-	MW-20	
	06/06/02		108.58	47.57	0.00	61.01	7,700	1,400	3.4 J	740	370	1,600	720	5.2 J	<25	7.4 J	-	MW-20	
	09/05/02			48.35	0.00	60.23	6,800	1,900	3.4 J	900	200	1,500	420	4.9 J	<20	10 J	-	MW-20	

TABLE 2
Summary of Groundwater Analytical & Elevation Results
ARCO Station No. 5110
5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
MW-20	12/05/02		108.58	49.03	0.00	59.55	6,100	1,800	4.6 J	760	37	2,100	470	5.2 J	<20	8.8 J	-	MW-20	
	02/18/03			49.30	0.00	59.28	8,800	1,900	<50	680	73 J	2,000	720 J	<120	<120	11 J	<3,800	MW-20	
	05/19/03			49.46	0.00	59.12	4,600	1,500	<50	520	48 J	1,900	510 J	<120	<120	12 J	<3,800	MW-20	
	08/19/03			49.70	0.00	58.88	5,500	920	<50	270	39 J	1,900	420 J	<120	<120	10 J	<3,800	MW-20	
	11/18/03			50.31	0.00	58.27	2,700	430	<50	110	28 J	1,200	410 J	<120	<120	<120	<3,800	MW-20	
	02/24/04			50.14	0.00	58.44	5,000	1,100	<50	420	110	3,300	660 J	<120	<120	18 J	<3,800	MW-20	
	05/25/04			50.74	0.00	57.84	4,600	860	<40	420	62 J	3,400	920 J	6.2 J	<100	19 J	<3,000	MW-20	
	08/24/04			51.26	0.00	57.32	4,600	760	<40	330	56 J	3,600	660 J	6.4 J	<100	28 J	<3,000	MW-20	
	11/16/04			51.94	0.00	56.64	4,600	93	<10	36	5.8 J	340	61 J	<25	<25	2.5 J	<750	MW-20	
Field Blank	11/18/03		-	-	-	-	24 J	<2.0	<2.0	<2.0	<4.0	<5.0	8.4 J	<5.0	<5.0	<5.0	<150	FB-5110-20031118	
	11/16/04		-	-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	FB-5110-20031118	
Trip Blank	09/29/99		-	-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	-	-	-	-	-	MW-100	
	12/07/99		-	-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	-	-	-	-	-	MW-100	
	06/14/00		-	-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	08/23/00		-	-	-	-	<50	0.19 J	0.31 J	0.084 J	<4.0	<5.0	15 J	<5.0	<5.0	<5.0	-	MW-100	
	12/08/00		-	-	-	-	<50	<0.30	<0.30	<0.30	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	02/15/01		-	-	-	-	<50	<0.30	<0.30	<0.30	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	06/14/01		-	-	-	-	<50	<0.30	<0.30	<0.30	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	09/14/01		-	-	-	-	<50	<0.30	<0.30	<0.30	<0.60	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	12/07/01		-	-	-	-	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	03/28/02		-	-	-	-	<100	<5.0	<5.0	<5.0	<5.0	<5.0	<25	<5.0	<5.0	<5.0	-	MW-100	
	06/06/02		-	-	-	-	9.7 J	<2.0	0.18 J	<2.0	0.20 J	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	09/05/02		-	-	-	-	12 J	<2.0	0.47 J	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	12/05/02		-	-	-	-	15	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	-	MW-100	
	02/18/03		-	-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	MW-100	
	05/19/03		-	-	-	-	11 J	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	MW-100	
	08/19/03		-	-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	MW-100	
	11/18/03		-	-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	TB-5110-20031118	

TABLE 2
Summary of Groundwater Analytical & Elevation Results
ARCO Station No. 5110
5731 East Firestone Blvd., South Gate, California

Well No.	Date	Notes	TOC Elevation (ft-MSL)	Depth to Water (feet)	Measured SPH Thickness (feet)	Calc. GW Elev. (ft-MSL)	GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	Ethanol (µg/L)	Sample ID	Comments
Trip Blank	02/24/04		-	-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	TB-5110-20040224	
	05/25/04			-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	TB-5110-20040525	
	08/24/04			-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	TB-5110-20040824	
	11/16/04			-	-	-	<50	<2.0	<2.0	<2.0	<4.0	<5.0	<50	<5.0	<5.0	<5.0	<150	TB-5110-20041116	

Notes:

GRO = Gasoline range organics

B = Benzene

T = Toluene

E = Ethylbenzene

X = Total xylenes

MTBE = Methyl tert-butyl ether

TBA = Tert-butyl alcohol

DIPE = Di-isopropyl ether

ETBE = Ethyl tert-butyl ether

TAME = Tert-amyl methyl ether

SPH = Separate phase hydrocarbons

TOC = Top of casing (surveyed)

Calc. GW Elev. = Calculated groundwater elevation = TOC - Depth to Water + 0.75*(Measured SPH Thickness); assuming a specific gravity of 0.75 for SPH

ft-MSL = feet above mean sea level

µg/L = Micrograms per liter

< = Analyte was not detected above the specified method reporting limit

- = Not measured or analyzed

J = Estimated value (less than the method reporting limit and greater than or equal to the method detection limit)

Refer to the reports in which data was first presented for more information on historical data.

GRO analyzed by EPA Method 8015 Modified. The carbon chain range used for analysis since 2002 Quarter 3 is C4-C12.

BTEX and oxygenates analyzed by EPA Method 8260B since 2002 Quarter 3.

A = Alternate analytical method results (used for method comparison studies)

ABN = Well abandoned; no sampling performed

DUP = Duplicate sample

INA = Well inaccessible; not sampled

TABLE 3
WELL CONSTRUCTION DETAILS
ARCO STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CALIFORNIA

Well Number	Well Installation Date	Well Destruction Date	Casing Diameter (in)	Casing Slot Size (in)	Total Depth (ft bgs)	Screened Intervals (ft bgs)
MW-19	9/20/1989	-	4	0.020	70.3	45-70
MW-20	9/20/1989	-	4	0.020	69.0	44-69
D-1	6/21/1990	1/24/2002	4	0.020	72.0	7-72
D-2	6/22/1990	1/25/2002	4	0.020	46.9	6.9-46.9
D-3	6/22/1990	-	4	0.020	47.3	7-47
VEW-1	4/6/1995	1/24/2002	2	0.040	50.0	15-25
			2	0.040		30-50
VEW-2	4/7/1995	-	2	0.040	54.0	4-7
			2	0.040		12-29
			2	0.040		34-54
VEW-3	4/8/1995	1/24/2002	2	0.040	50.0	5-11
			2	0.040		15-25
			2	0.040		30-50
VEW-4	4/9/1995	1/25/2002	2	0.040	50.0	5-10
			2	0.040		15-25
			2	0.040		30-50
MW-A1	1998	-	2	0.020	61.4	NA
MW-A2	1998	-	2	0.020	56.6	NA
MW-A3	12/1/1999	-	4	0.020	65.0	35-65
MW-A4	12/1/1999	-	4	0.020	65.0	35-65
MW-A5	10/21/2001	-	4	0.020	65.0	30-65
MW-A6	10/30/2001	-	4	0.020	65.0	30-65
MW-A7	4/16/2002	-	2	0.020	65.0	10-30
			4	0.020		35-65
AS/SVE-1	9/30/2003	-	2	0.020	70.0	8-28
			2	0.020		35-55
			1	0.020		64-66
AS/SVE-2	10/2/2003	-	2	0.020	70.0	7-27
			2	0.020		35-55
			1	0.020		63-65
AS/SVE-3	10/4/2003	-	2	0.020	70.0	8-28
			2	0.020		35-55
			1	0.020		66-68
AS/SVE-4	9/30/2003	-	2	0.020	70.0	7-27
			2	0.020		34-54
			1	0.020		60-62
AS/SVE-5	9/29/2003	-	2	0.020	70.0	7-27
			2	0.020		35-55
			1	0.020		64-66

Notes:

- - In Use

NA- Not Available

TABLE 4
SUMMARY OF WELLS IDENTIFIED WITHIN A ONE-MILE RADIUS
ARCO STATION NO. 5110
SOUTHGATE, CALIFORNIA

State Well ID No.	Well ID No.	Usage	Well Operator	Status	Well Location	Distance/Direction From Site (approximate - ft)	Total Depth (ft bgs)	Perforation Intervals (ft bgs)	Well Casing Diam.	Date Last Gauged	Wellhead Elevation (ft AMSL)	Depth to Water (ft bgs)	Groundwater Elevation (ft AMSL)
--	"Fire Well"	Ab	AR	Ab	181 f S of RR tracks 400 ft E of LA River 100 ft E of Long Beach Fwy	2,000 ft NW	575	--	12	--	--	--	--
03S/12W-05D02	1535H	PS	CSG	--	160 ft E of Garfield Ave 175 ft N of Southern Ave	1,700 ft S	222	--	6"	4/3/2003	105.2	57.2	48.0
02S/12W-31Q02	SG-25	PS	CSG	Active	East of Los Angeles Rvr and west of Long Beach Freeway	1,800 ft SW	1331	280-350 360-380 400-550	16"	--	--	90.0	--
03S/12W-06D05	SLY	PS	LTOC	--	0.1 NW of intersection of Southern Avenue and Garfield	1,800 ft SW	--	--	--	--	--	--	--
3S/12W-05C06	NEW1	PS	RD	--	Luxor St & Mitla Ave	1,900 ft SE	--	--	--	--	--	--	--
02S/12W-31Q03	SG-24	PS	CSG	Active	East of Los Angeles Rvr and west of Long Beach Freeway	1,900 ft SW	1266	310-390 434-560 570-630	16"	--	--	87	--
02S/12W-31Q01	1525G	--	CSG	--	Southern Ave & Rayo Ave	3,400 ft SW	--	--	--	4/15/2003	102.5	137.0	-34.5
02S/12W-31H02	1524E	Observation	LFCD	--	West of the Los Angeles River & south of Fostoria St	3,400 ft NW	220	195-205		3/19/1990	107.6	72.8	34.8
02S/12W-31Q02	1525H	--	CSG	--	Southern Ave & Burtis St	3,400 ft SW	--	--	--	4/15/2003	102.5	104.0	-1.5
03S/12W-06B03	1525D/SG-23	PS	CSG	--	150 ft S of Southern Ave 30 ft W of Salt Lake Ave	3,800 ft SW	856	530-624 662-692 772-799	18"	4/15/2003	102.1	103.0	-0.9
02S/12W-33M01	1544G	PS	DWD	--	Pellet St & Riverson Ave	4,200 ft NE	454	378-415 426-431	16"	5/1/2003	114.5	85.6	28.9
03S/12W-05M01	1536F	PS	CSG	--	0.5 Mi N of Imperial 150-200 ft E of Garfield S. of Gate Lee Circle	4,300 ft S	578	50-75 495-595	16"	10/15/2002	98.4	77.9	20.5
02S/12W-03H03	1524F	--	SCWC	--	Wilcox Ave & Santa Ana St	4,800 ft NW	--	--	--	11/28/2000	114.0	98.0	16.0
02S/12W-31M02	SG-7/ 1514A	PS	CSG	--	300 feet west of Mason St & Nevill Ave	5,100 ft W	883	500-600	16"	4/15/2003	113	97.3	15.6

TABLE 4
SUMMARY OF WELLS IDENTIFIED WITHIN A ONE-MILE RADIUS
ARCO STATION NO. 5110
SOUTHGATE, CALIFORNIA

State Well ID No.	Well ID No.	Usage	Well Operator	Status	Well Location	Distance/Direction From Site (approximate - ft)	Total Depth (ft bgs)	Perforation Intervals (ft bgs)	Well Casing Diam.	Date Last Gauged	Wellhead Elevation (ft AMSL)	Depth to Water (ft bgs)	Groundwater Elevation (ft AMSL)
02S/12W-29P06	1533A	PS	Private	--	Jaboneria Rd & Priory St	5,300 ft N	--	--	--	12/20/1989	116.0	89.4	26.6
02S/12W-29M05	1533M	PS	SCWC	--	100 ft S of Priory St 360 ft W of Eastern Ave	5,300 ft N	650	376-368 380-400 422-425 561-581	16"	10/31/2002	118.0	253.0	-135.0
03S/12W-05A01	Well 20	PS	DWD	--	--	3,800 ft SE	--	--	--	--	--	--	--
02S/12W-31B03	Hoffman Well No. 2	PS	SCWC	--	--	4,600 ft NW	--	--	--	--	--	--	--
02S/12W28N03	1543F	PS	SCWC	--	40 ft S of Clara St 400 ft E of Perry Rd Opposite 6447 Clara St	>1 mile NE	352		12"	4/28/2003	120	92.3	27.7
02S/12W-33P02	1555H	PS	USC	--	Firestone Blvd & Old River School Road	>1 mile E	180	--	8"	5/23/2003	113.1	59.2	53.9
03S/12W-06D04	1515L	PS	CSG	--	1200 ft N of Tweedy Blvd 150 ft W of Walnut	>1 mile W	815	610-620 626-666 678-746	18"	4/15/2003	106.6	106.0	0.6
03S/12W-06D02	1515J	PS	CSG	--	325 ft W of Pinehurst Ave 850 ft N of Tweedy Blvd.	>1 mile W	813	615-745 767-775	18"	4/15/2003	105.4	112.9	-7.5
03S/12W-04D02	1555J	PS	DWD	--	0.22 Mi. W of Rives Ave 0.2 Mi E of Old River Rd 100 ft South of Burns Ave	>1 mile E	674	375-412 612-620	16	5/1/2003	113	83.5	29.5

Legend:

-- Information not available at the time of this report or not available to the public
SCWC - Southern California Water Company
DWD - Downey Water District/City of Downey
CSG - City of Southgate
DCWD - Downey City Water District
RD - Rockview Daries
CLW - City of Lakewood Water Department
PS -Public Supply (groundwater well potentially operated for public use/consumption)
PWC - Park Water Company
LFCD - Los Angeles Flood Control District
LTOC - Lunday-Thagard Oil Company
GW - Groundwater Observation
Ab - Abandoned
AR - ARCO Vinvale Terminal

TABLE 5
SUMMARY OF MONTHLY EFR EVENTS (DISCONTINUED)
ATLANTIC RICHFIELD COMPANY SERVICE STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CALIFORNIA

WELL NUMBER	DATE OF PURGE	PURGE VOLUME (gallons)
D-1	07/19/99	850.00
	08/13/99	640.00
	09/08/99	750.00
	10/11/99	900.00
	11/08/99	300.00
	12/06/99	900.00
	01/03/00	560.00
	02/02/00	500.00
	03/06/00	800.00
	04/03/00	600.00
	05/01/00	490.00
	06/02/00	260.00
	07/25/00	580.00
	08/14/00	330.00
	09/14/00	600.00
	10/17/00	300.00
	11/13/00	450.00
	12/14/00	600.00
	01/11/01	500.00
	02/20/01	350.00
	03/22/01	600.00
	04/26/01	510.00
	05/24/01	1,000.00
	06/13/01	550.00
	07/19/01	370.00
	08/24/01	400.00
	09/13/01	165.00
	10/26/01	180.00
	11/21/01	400.00
	12/26/01	337.00
	01/17/02	165.00
	01/25/02	ABN

TABLE 5
SUMMARY OF MONTHLY EFR EVENTS (DISCONTINUED)
ATLANTIC RICHFIELD COMPANY SERVICE STATION NO. 5110
5731 EAST FIRESTONE BOULEVARD
SOUTH GATE, CALIFORNIA

WELL NUMBER	DATE OF PURGE	PURGE VOLUME (gallons)
MW-20	09/13/01	165.00
	10/26/01	1.00
	11/21/01	300.00
	12/26/01	300.00
	01/17/02	220.00
	DISCONTINUED	DISCONTINUED
MW-A5	01/17/02	220.00
	DISCONTINUED	DISCONTINUED
MW-A6	01/17/02	248.00
	DISCONTINUED	DISCONTINUED
Total Gallons Removed		17,391.00

Notes:

All measurement in feet above mean sea level.

ABN - Abandoned

TABLE 6 - SVE OPERATION REPORT

Atlantic Richfield Company Station No. 5110 5731 East Firestone Boulevard South Gate, CA VES SUMMARY OF THE OPERATING PERIOD Fourth Quarter, 2004	
Atlantic Richfield Company Engineer:	Ralph Moran
Consultant:	SECOR International Incorporated
Lead Agency:	SCAQMD
Reporting Period:	October 1, 2004 through December 31, 2004
Equipment Inventory:	Paragon Environmental Systems ET-250 Trailer Mounted (1) Ingersol Rand Rotary Screw Compressor
Operating Mode:	Thermal Oxidation
SCAQMD Permit #:	F61746
Influent GRO Concentration at system start up:	System startup 4/7/04
Field observed concentration:	>9,999 ppmv
Laboratory reported concentration:	8,400 ppmv
Influent Benzene Concentration at system start up:	System startup 4/7/04
Field observed concentration:	not measured
Laboratory reported concentration:	92 ppmv
Influent GRO Concentration at end of period:	
Field observed concentration:	1,438 ppmv (12/16/04)
Laboratory reported concentration:	1,700 ppmv (12/16/04)
Influent Benzene Concentration at end of period:	
Field observed concentration:	not measured
Laboratory reported concentration:	2.2 ppmv (12/16/04)
Flow Rate at end of period:	178 scfm (12/31/04)
Hydrocarbons Removed This Period:	8,953 lb
Utility usage:	
Electricity:	14,397 kWh
Natural Gas:	10,373 Therms
Percent up time during this period:	93% (Vapor Extraction)
Number of auto shut downs during this period:	3 (Vapor Extraction)
Notes: NA = Not Available GRO = Gasoline Range Organics (C4 - C12)	

TABLE 7 - SUMMARY OF SVE OPERATION DATA

Atlantic Richfield Company Station No. 5110 5731 East Firestone Boulevard South Gate, CA VES OPERATING REPORT Fourth Quarter, 2004		
CURRENT SOURCE (Without Dilution Air Added)		
Current Well Source:	SVE-1, SVE-2, SVE-3, SVE-4, SVE-5, MW-A7 (deep zones)	
GRO Concentration at end of period:	1,700 ppmv	(12/16/04)
GRO Concentration at end of last period:	3,500 ppmv	(9/23/04)
Initial GRO Concentration:	8,400 ppmv	(initial startup 4/7/04)
Benzene Concentration at end of period:	0.98 ppmv	(12/16/04)
Benzene Concentration at end of last period:	10 ppmv	(9/23/04)
Initial Benzene Concentration:	92 ppmv	(initial startup 4/7/04)
CURRENT PROCESS (With Dilution Air Added) - INFLUENT SUMMARY		
GRO Concentration at end of period:	NA	
GRO Concentration at end of last period:	NA	
Benzene Concentration at end of period:	NA	
Benzene Concentration at end of last period:	NA	
Initial Benzene Concentration:	22 ppmv (initial startup 4/7/04)	
CURRENT PROCESS - EFFLUENT SUMMARY		
GRO Concentration at end of period:	2.2 ppmv	(12/16/04)
GRO Permit Requirement Concentration:	50 ppmv	(as Hexane)
Percent (%) TPH Conversion:	100 %	
Benzene Concentration at end of period:	0.029 ppmv	(12/16/04)
Benzene Permit Requirement Concentration:	0.24 ppmv	
Percent Benzene Conversion:	NA %	
Cumulative Hydrocarbons removed:	37,369 lb	
Avg. Stack Temperature (Inlet):	1513 deg. F	
(Outlet):	1513 deg. F	
Avg. Source Flow:	178 scfm	
Avg. Effluent Flow:	178 scfm	
Avg. Source Vacuum:	56 in. H ₂ O	
Notes: Average values do not include down time. NA = Not Applicable NM = Not Measured GRO = Gasoline Range Organics (C ₄ - C ₁₂)		

TABLE 8
Summary of Process Vapor Sampling Results
Atlantic Richfield Company Station No. 5110
5731 East Firestone Boulevard
South Gate, CA

Sample Date	Sample ID	GRO (ppmV)	Benzene (ppmV)	Ethylbenzene (ppmV)	Toluene (ppmV)	Total Xylenes (ppmV)	DIPE (ppmV)	ETBE (ppmV)	MTBE (ppmV)	TAME (ppmV)	TBA (ppmV)	CO ₂ (%)	CO (%)	CH ₄ (%)	N ₂ (%)	O ₂ (%)
4/7/2004	Influent	8,400	92	38	250	170	<24	<27	<28	<24	<330	10	<0.10	0.32	83	6.6
	Infl. w/ dil.	1,900	22	19	68	96	<6.0	<6.6	7.1	<6.0	<82	1.7	<0.10	<0.10	78	21
	Effluent	3.0	0.19	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	2.5	<0.10	<0.10	78	19
4/13/2004	Influent	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Infl. w/ dil.	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Effluent	3.0	<0.059	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
4/21/2004	Influent	6,200	81	52	250	220	<12	<13	27	<12	<160	5.5	<0.10	<0.10	80	14
	Infl. w/ dil.	860	10	9.9	47	51	<2.4	<2.7	4.5	<2.4	<33	0.75	<0.10	<0.10	78	21
	Effluent	3.1	<0.061	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	1.8	<0.10	<0.10	80	18
4/27/2004	Influent	7,000	40	24	180	77	<12	<13	15	<12	<160	5.3	<0.10	0.13	80	15
	Infl. w/ dil.	2,400	21	28	89	120	<2.4	<2.7	8.9	<2.4	<33	1.8	<0.10	<0.10	78	20
	Effluent	3.6	<0.061	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	2.5	<0.10	<0.10	79	18
5/5/2004	Influent	5,900	54	72	290	300	<12	<13	17	<12	<160	3.1	<0.10	<0.10	79	18
	Infl. w/ dil.	1,900	13	18	68	80	<2.4	<2.7	4.2	<2.4	<33	1.0	<0.10	<0.10	79	20
	Effluent	<2.4	<0.060	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	2.1	<0.10	<0.10	80	18
5/12/2004	Influent	4,300	20	15	78	61	<12	<13	7.6	<12	<160	2.7	<0.10	<0.10	79	18
	Infl. w/ dil.	1,500	9.7	14	48	68	<2.4	<2.7	2.9	<2.4	<33	1.0	<0.10	<0.10	79	20
	Effluent	<2.4	0.093	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	2.1	<0.10	<0.10	79	19
5/19/2004	Influent	3,400	30	39	150	180	<12	<13	<14	<12	<160	2.3	<0.10	<0.10	79	19
	Infl. w/ dil.	1,600	13	23	70	120	<4.8	<5.3	<5.6	<4.8	<66	0.92	<0.10	<0.10	79	20
	Effluent	<2.4	0.096	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	2.0	<0.10	<0.10	80	19

TABLE 8
Summary of Process Vapor Sampling Results
Atlantic Richfield Company Station No. 5110
5731 East Firestone Boulevard
South Gate, CA

Sample Date	Sample ID	GRO (ppmV)	Benzene (ppmV)	Ethylbenzene (ppmV)	Toluene (ppmV)	Total Xylenes (ppmV)	DIPE (ppmV)	ETBE (ppmV)	MTBE (ppmV)	TAME (ppmV)	TBA (ppmV)	CO ₂ (%)	CO (%)	CH ₄ (%)	N ₂ (%)	O ₂ (%)
6/2/2004	Influent	3,700	28	44	130	210	<2.4	<2.7	6.6	<2.4	<33	2.0	<0.10	<0.10	79	19
	Infl. w/ dil.	1,500	18	36	79	190	<4.8	<5.3	<5.6	<4.8	<66	1.2	<0.10	<0.10	79	20
	Effluent	<2.4	<0.059	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	2.0	<0.10	<0.10	79	19
7/7/2004	Influent	1,600	17	25	96	130	<2.4	<2.7	2.9	<2.4	<33	NA	NA	NA	NA	NA
	Infl. w/ dil.	1,400	12	22	70	120	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
	Effluent	<2.4	<1.2	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
8/4/2004	Influent	1,200	8.3	16	70	86	<4.8	<5.3	<5.6	<4.8	<66	1.2	<0.10	<0.10	79	20
	Infl. w/ dil.	1,200	6.4	15	55	88	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
	Effluent	<2.4	0.082	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
9/9/2004	Influent	900	4.1	13	46	72	<2.4	<2.7	<2.8	<2.4	<33	1.3	<0.10	<0.10	79	20
	Effluent	<2.4	<0.059	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
9/23/2004	Influent	3,500	10	15	14	75	<2.4	<2.7	7.1	<2.4	<33	6.9	<0.10	<0.10	86	7.4
10/7/2004	Influent	1,500	2.1	3.0	9.7	24	<2.4	<2.7	<2.8	<2.4	<33	4.7	<0.10	<0.10	83	12
	Effluent	<2.4	<0.059	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	3.2	<0.10	<0.10	80	16
11/4/2004	Influent	1,800	<1.2	1.6	6.2	13	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
	Effluent	<2.4	0.062	<0.92	<1.1	<1.8	<2.4	<2.7	<2.8	<2.4	<33	NA	NA	NA	NA	NA
12/16/2004	Influent	1,700	0.98	2.0	7.0	17	<0.4	<0.4	<0.4	<0.4	<2.0	4.4	<0.001	0.23	15	83
	Effluent	2.2	0.029	0.015	0.033	0.12	<0.002	<0.002	<0.002	<0.002	<0.01	2.9	0.017	0.0074	18	82

Notes:

GRO = Gasoline Range Organics (C₄ - C₁₂)

MTBE = Methyl Tertiary Butyl Ether

ppmV = Parts per million on a volume basis

NS = Not sampled

NA = Not analyzed

GRO analyzed using EPA Method 8015 Modified

BTEX and Oxygenates analyzed using EPA Method 8260B

Effluent Benzene analyzed using EPA Method 410A Modified

Fixed Gases analyzed using ASTM D1946-90

TABLE 9
Summary of Individual Well Vapor Sample Analytical Results
Atlantic Richfield Company Station No. 5110
5731 East Firestone Boulevard
South Gate, CA

Sample Date	Sample ID	GRO (ppmV)	Benzene (ppmV)	Ethylbenzene (ppmV)	Toluene (ppmV)	Total Xylenes (ppmV)	DIPE (ppmV)	ETBE (ppmV)	MTBE (ppmV)	TAME (ppmV)	TBA (ppmV)	CO ₂ (%)	Methane (%)	O ₂ (%)
4/7/2004	SVE-1 Shallow	11,000	120	100	320	470	<12	<13	23	<12	<160	11	0.48	<5.5
4/7/2004	SVE-1 Deep	10,000	100	100	280	510	<12	<13	43	<12	<160	11	0.53	<5.5
4/7/2004	SVE-2 Shallow	14,000	150	88	360	470	<12	<13	72	<12	<160	12	0.81	<5.5
4/7/2004	SVE-2 Deep	14,000	130	92	350	500	<12	<13	67	<12	<160	12	0.66	<5.5
4/7/2004	SVE-3 Shallow	14,000	270	130	420	570	<24	<27	<28	<24	<330	12	0.79	<5.5
4/7/2004	SVE-3 Deep	13,000	250	130	440	610	<24	<27	46	<24	<330	12	0.68	<5.5
4/7/2004	SVE-4 Shallow	5,900	38	45	190	210	<12	<13	<14	<12	<160	9.8	0.24	7.5
4/7/2004	SVE-4 Deep	8,500	82	46	340	200	<24	<27	<28	<24	<330	12	0.19	<5.5
4/7/2004	SVE-5 Shallow	5,100	11	15	3	31	<2.4	<2.7	<2.8	<2.4	<33	7.3	0.42	9.3
4/7/2004	SVE-5 Deep	13,000	15	9.8	2.8	22	<6.0	<6.6	<7.0	<6.0	<82	6.4	1.1	9.2
4/7/2004	MW-A7	5,200	25	31	120	230	<6.0	<6.6	13	<6.0	<82	0.1	<0.1	23

Notes:

GRO = Gasoline Range Organics (C₄ - C₁₂)

MTBE = Methyl Tertiary Butyl Ether

ppmV = Parts per million on a volume basis

NS = Not sampled

NA = Not analyzed

GRO analyzed using EPA Method 8015 Modified

BTEX and Oxygenates analyzed using EPA Method 8260B

Effluent Benzene analyzed using EPA Method 410A Modified

Fixed Gases analyzed using ASTM D1946-90

TABLE 10
Individual Soil Vapor Extraction Well Field Monitoring Data
Atlantic Richfield Company Station No. 5110
5731 East Firestone Boulevard
South Gate, CA
Initial Start-up Date 4/7/04

Well Number (Slotted Interval) (Start-up H.C. ppmv)	Monitoring Date	VOC Concentration (ppmv)	Vapor Well Flow Rate (scfm)	Vacuum at Flow Potential (in. w.c.)	Well Status
SVE-1 Shallow (8 TO 28) (11,000)*	10/07/04	--	--	--	OFF-LINE
	10/14/04	--	--	--	OFF-LINE
	10/21/04	--	--	--	OFF-LINE
	10/28/04	--	--	--	OFF-LINE
	11/04/04	--	--	--	OFF-LINE
	11/12/04	--	--	--	OFF-LINE
	11/18/04	--	--	--	OFF-LINE
	11/23/04	--	--	--	OFF-LINE
	12/02/04	--	--	--	OFF-LINE
	12/09/04	--	--	--	OFF-LINE
	12/16/04	--	--	--	OFF-LINE
	12/23/04	--	--	--	OFF-LINE
	12/30/04	--	--	--	OFF-LINE
SVE-1 Deep (35 TO 55) (10,000)*	10/07/04	121	--	50	ON-LINE
	10/14/04	1,798	--	53	ON-LINE
	10/21/04	495	--	47	ON-LINE
	10/28/04	72	--	60	ON-LINE
	11/04/04	94	--	60	ON-LINE
	11/12/04	97	--	62	ON-LINE
	11/18/04	108	--	64	ON-LINE
	11/23/04	122	--	48	ON-LINE
	12/02/04	97	--	46	ON-LINE
	12/09/04	86	--	62	ON-LINE
	12/16/04	97	--	63	ON-LINE
	12/23/04	89	--	61	ON-LINE
	12/30/04	123	--	61	ON-LINE
SVE-2 Shallow (7 TO 27) (14,000)*	10/07/04	--	--	--	OFF-LINE
	10/14/04	--	--	--	OFF-LINE
	10/21/04	--	--	--	OFF-LINE
	10/28/04	--	--	--	OFF-LINE
	11/04/04	--	--	--	OFF-LINE
	11/12/04	--	--	--	OFF-LINE
	11/18/04	--	--	--	OFF-LINE
	11/23/04	--	--	--	OFF-LINE
	12/02/04	--	--	--	OFF-LINE
	12/09/04	--	--	--	OFF-LINE
	12/16/04	--	--	--	OFF-LINE
	12/23/04	--	--	--	OFF-LINE
	12/30/04	--	--	--	OFF-LINE
SVE-2 Deep (35 TO 55) (14,000)*	10/07/04	1,822	--	50	ON-LINE
	10/14/04	1,621	--	53	ON-LINE
	10/21/04	3,525	--	47	ON-LINE
	10/28/04	3,537	--	60	ON-LINE
	11/04/04	1,587	--	60	ON-LINE
	11/12/04	3,814	--	62	ON-LINE
	11/18/04	1,496	--	64	ON-LINE
	11/23/04	4,613	--	48	ON-LINE
	12/02/04	2,418	--	46	ON-LINE
	12/09/04	1,998	--	62	ON-LINE
	12/16/04	2,133	--	63	ON-LINE
	12/23/04	1,984	--	61	ON-LINE
	12/30/04	1,981	--	61	ON-LINE

TABLE 10
Individual Soil Vapor Extraction Well Field Monitoring Data
Atlantic Richfield Company Station No. 5110
5731 East Firestone Boulevard
South Gate, CA
Initial Start-up Date 4/7/04

Well Number (Slotted Interval) (Start-up H.C. ppmv)	Monitoring Date	VOC Concentration (ppmv)	Vapor Well Flow Rate (scfm)	Vacuum at Flow Potential (in. w.c.)	Well Status
SVE-3 Shallow (8 TO 28) (14,000)*	10/07/04	--	--	--	OFF-LINE
	10/14/04	--	--	--	OFF-LINE
	10/21/04	--	--	--	OFF-LINE
	10/28/04	--	--	--	OFF-LINE
	11/04/04	--	--	--	OFF-LINE
	11/12/04	--	--	--	OFF-LINE
	11/18/04	--	--	--	OFF-LINE
	11/23/04	--	--	--	OFF-LINE
	12/02/04	--	--	--	OFF-LINE
	12/09/04	--	--	--	OFF-LINE
	12/16/04	--	--	--	OFF-LINE
	12/23/04	--	--	--	OFF-LINE
	12/30/04	--	--	--	OFF-LINE
SVE-3 Deep (35 TO 55) (13,000)*	10/07/04	2,832	--	50	ON-LINE
	10/14/04	2,049	--	53	ON-LINE
	10/21/04	3,189	--	47	ON-LINE
	10/28/04	12	--	60	ON-LINE
	11/04/04	245	--	60	ON-LINE
	11/12/04	22	--	62	ON-LINE
	11/18/04	271	--	64	ON-LINE
	11/23/04	89	--	48	ON-LINE
	12/02/04	89	--	46	ON-LINE
	12/09/04	92	--	62	ON-LINE
	12/16/04	94	--	63	ON-LINE
	12/23/04	101	--	61	ON-LINE
	12/30/04	101	--	61	ON-LINE
SVE-4 Shallow (7 TO 27) (5,900)*	10/07/04	--	--	--	OFF-LINE
	10/14/04	--	--	--	OFF-LINE
	10/21/04	--	--	--	OFF-LINE
	10/28/04	--	--	--	OFF-LINE
	11/04/04	--	--	--	OFF-LINE
	11/12/04	--	--	--	OFF-LINE
	11/18/04	--	--	--	OFF-LINE
	11/23/04	--	--	--	OFF-LINE
	12/02/04	--	--	--	OFF-LINE
	12/09/04	--	--	--	OFF-LINE
	12/16/04	--	--	--	OFF-LINE
	12/23/04	--	--	--	OFF-LINE
	12/30/04	--	--	--	OFF-LINE
SVE-4 Deep (34 TO 54) (8,500)*	10/07/04	1,773	--	50	ON-LINE
	10/14/04	944	--	53	ON-LINE
	10/21/04	829	--	47	ON-LINE
	10/28/04	10	--	60	ON-LINE
	11/04/04	28	--	60	ON-LINE
	11/12/04	21	--	62	ON-LINE
	11/18/04	35	--	64	ON-LINE
	11/23/04	219	--	48	ON-LINE
	12/02/04	123	--	46	ON-LINE
	12/09/04	96	--	62	ON-LINE
	12/16/04	82	--	63	ON-LINE
	12/23/04	96	--	61	ON-LINE
	12/30/04	74	--	61	ON-LINE

TABLE 10
Individual Soil Vapor Extraction Well Field Monitoring Data
Atlantic Richfield Company Station No. 5110
5731 East Firestone Boulevard
South Gate, CA
Initial Start-up Date 4/7/04

Well Number (Slotted Interval) (Start-up H.C. ppmv)	Monitoring Date	VOC Concentration (ppmv)	Vapor Well Flow Rate (scfm)	Vacuum at Flow Potential (in. w.c.)	Well Status
SVE-5 Shallow (7 TO 27) (5,100)*	10/07/04	--	--	--	OFF-LINE
	10/14/04	--	--	--	OFF-LINE
	10/21/04	--	--	--	OFF-LINE
	10/28/04	--	--	--	OFF-LINE
	11/04/04	--	--	--	OFF-LINE
	11/12/04	--	--	--	OFF-LINE
	11/18/04	--	--	--	OFF-LINE
	11/23/04	--	--	--	OFF-LINE
	12/02/04	--	--	--	OFF-LINE
	12/09/04	--	--	--	OFF-LINE
	12/16/04	--	--	--	OFF-LINE
	12/23/04	--	--	--	OFF-LINE
	12/30/04	--	--	--	OFF-LINE
SVE-5 Deep (35 TO 55) (13,000)*	10/07/04	736	--	50	ON-LINE
	10/14/04	183	--	53	ON-LINE
	10/21/04	244	--	47	ON-LINE
	10/28/04	4	--	60	ON-LINE
	11/04/04	57	--	60	ON-LINE
	11/12/04	17	--	62	ON-LINE
	11/18/04	67	--	64	ON-LINE
	11/23/04	186	--	48	ON-LINE
	12/02/04	201	--	46	ON-LINE
	12/09/04	203	--	62	ON-LINE
	12/16/04	76	--	63	ON-LINE
	12/23/04	68	--	61	ON-LINE
	12/30/04	70	--	61	ON-LINE
MW-A7 Shallow (10 TO 30) (5,200)*	10/07/04	1,372	--	50	ON-LINE
	10/14/04	841	--	53	ON-LINE
	10/21/04	1,284	--	47	ON-LINE
	10/28/04	88	--	60	ON-LINE
	11/04/04	146	--	60	ON-LINE
	11/12/04	74	--	62	ON-LINE
	11/18/04	152	--	64	ON-LINE
	11/23/04	1,204	--	48	ON-LINE
	12/02/04	906	--	46	ON-LINE
	12/09/04	409	--	62	ON-LINE
	12/16/04	804	--	63	ON-LINE
	12/23/04	771	--	61	ON-LINE
	12/30/04	789	--	61	ON-LINE
MW-A7 Deep (35 TO 65) (--)*	10/07/04	--	--	--	OFF-LINE
	10/14/04	--	--	--	OFF-LINE
	10/21/04	--	--	--	OFF-LINE
	10/28/04	--	--	--	OFF-LINE
	11/04/04	--	--	--	OFF-LINE
	11/12/04	--	--	--	OFF-LINE
	11/18/04	--	--	--	OFF-LINE
	11/23/04	--	--	--	OFF-LINE
	12/02/04	--	--	--	OFF-LINE
	12/09/04	--	--	--	OFF-LINE
	12/16/04	--	--	--	OFF-LINE
	12/23/04	--	--	--	OFF-LINE
	12/30/04	--	--	--	OFF-LINE

VOC = Volatile Organic Compounds

* = GRO from Laboratory analytical samples taken on start-up

-- = not measured

TABLE 11
Individual Air Sparge Well Monitoring Data
Atlantic Richfield Company Station No. 5110
5731 East Firestone Boulevard
South Gate, CA
Initial Start-Up Date 4/7/04

Well Number	Monitoring Date	Injection Flow Rate (scfh)	Injection Pressure (psi)
AS-1	Off Line	Off Line	Off Line
AS-2	Off Line	Off Line	Off Line
AS-3	Off Line	Off Line	Off Line
AS-4	Off Line	Off Line	Off Line
AS-5	Off Line	Off Line	Off Line

-- Not measured.

TABLE 12a

DAILY OPERATIONAL LOG																	
ATLANTIC RICHFIELD COMPANY STATION No .5110																	
SYSTEM START-UP DATE: 4/7/04																	
OCTOBER, 2004																	
DATE	DATA SOURCE	NOTES	LAB INF. CONC. SOURCE (PPMV)	LAB INF. CONC. W/ DIL. (PPMV)	LAB EFFLUENT CONC. (PPMV)	FIELD INF. CONC. SOURCE (PPMV)	FIELD INF. CONC. W/ DIL. (PPMV)	FIELD EFFLUENT CONC. (PPMV)	DILUTION VALVE OPEN (%)	GRO CONV. (%)	SOURCE FLOW (SCFM)	PROCESS FLOW (SCFM)	MANIFOLD VACUUM (IN H ₂ O)	COMBUSTION TEMP. (DEG F)	EFFLUENT TEMP. (DEG F)	CUMULATIVE HC REMOVED (LB)	HOURS ON-LINE
10/01/04	*					2,079	2,079	2.7	0.0	99.9	172	172	52	1,511	1,511	28,612	24.0
10/02/04	*					2,079	2,079	2.7	0.0	99.9	172	172	52	1,511	1,511	28,809	24.0
10/03/04	*					2,079	2,079	2.7	0.0	99.9	172	172	52	1,511	1,511	29,006	24.0
10/04/04	*					2,079	2,079	2.7	0.0	99.9	172	172	52	1,511	1,511	29,203	24.0
10/05/04	*					2,079	2,079	2.7	0.0	99.9	172	172	52	1,511	1,511	29,399	24.0
10/06/04	*					2,079	2,079	2.7	0.0	99.9	172	172	52	1,511	1,511	29,596	24.0
10/07/04	TECH	1	1,500	NA	<2.4	2,216	2,216	11.8	0.0	99.8	159	159	50	1,511	1,511	29,674	24.0
10/08/04	*					2,216	2,216	11.8	0.0	99.8	159	159	50	1,511	1,511	29,752	24.0
10/09/04	*					2,216	2,216	11.8	0.0	99.8	159	159	50	1,511	1,511	29,830	24.0
10/10/04	*					2,216	2,216	11.8	0.0	99.8	159	159	50	1,511	1,511	29,908	24.0
10/11/04	*					2,216	2,216	11.8	0.0	99.8	159	159	50	1,511	1,511	29,986	24.0
10/12/04	*					2,216	2,216	11.8	0.0	99.8	159	159	50	1,511	1,511	30,064	24.0
10/13/04	*					2,216	2,216	11.8	0.0	99.8	159	159	50	1,511	1,511	30,141	24.0
10/14/04	TECH					1,679	1,679	3.9	0.0	99.8	169	169	53	1,518	1,515	30,224	23.9
10/15/04	*					1,679	1,679	3.9	0.0	99.8	169	169	53	1,518	1,515	30,307	24.0
10/16/04	*					1,679	1,679	3.9	0.0	99.8	169	169	53	1,518	1,515	30,390	24.0
10/17/04	*					1,679	1,679	3.9	0.0	99.8	169	169	53	1,518	1,515	30,472	24.0
10/18/04	*					1,679	1,679	3.9	0.0	99.8	169	169	53	1,518	1,515	30,555	24.0
10/19/04	*					1,679	1,679	3.9	0.0	99.8	169	169	53	1,518	1,515	30,638	24.0
10/20/04	*					1,679	1,679	3.9	0.0	99.8	169	169	53	1,518	1,515	30,646	2.2
10/21/04	TECH	2				2,249	2,249	1.3	0.0	99.8	176	176	47	1,505	1,507	30,700	15.0
10/22/04	*					2,249	2,249	1.3	0.0	99.8	176	176	47	1,505	1,507	30,786	24.0
10/23/04	*					2,249	2,249	1.3	0.0	99.8	176	176	47	1,505	1,507	30,872	24.0
10/24/04	*					2,249	2,249	1.3	0.0	99.8	176	176	47	1,505	1,507	30,958	24.0
10/25/04	*					2,249	2,249	1.3	0.0	99.8	176	176	47	1,505	1,507	31,045	24.0
10/26/04	*					2,249	2,249	1.3	0.0	99.8	176	176	47	1,505	1,507	31,131	24.0
10/27/04	*					2,249	2,249	1.3	0.0	99.8	176	176	47	1,505	1,507	31,217	24.0
10/28/04	TECH	3				30	30	20.7	0.0	99.8	172	172	60	1,513	1,513	31,301	24.0
10/29/04	*					30	30	20.7	0.0	99.8	172	172	60	1,513	1,513	31,386	24.0
10/30/04	*					30	30	20.7	0.0	99.8	172	172	60	1,513	1,513	31,470	24.0
10/31/04	*					30	30	20.7	0.0	99.8	172	172	60	1,513	1,513	31,554	24.0
TOTAL POUNDS OF HYDROCARBONS REMOVED SINCE INITIAL START UP											31,554						
TOTAL POUNDS OF HYDROCARBONS REMOVED DURING OCTOBER, 2004											3,139						
TOTAL HOURS ON-LINE DURING OCTOBER, 2004											713						

Notes:

1 - Certified sampling

3 - LOW CONCENTRATION ANOMALY

2 - System was off upon arrival due to FSC fault.

TECH - Technician performed O&M on this date

* - Data extrapolated

NA - Not Applicable

GRO - Gasoline Range Organics

TABLE 12b

DAILY OPERATIONAL LOG																	
ATLANTIC RICHFIELD COMPANY STATION No .5110																	
SYSTEM START-UP DATE: 4/7/04																	
NOVEMBER, 2004																	
DATE	DATA SOURCE	NOTES	LAB INF. CONC. SOURCE (PPMV)	LAB INF. CONC. W/ DIL. (PPMV)	LAB EFFLUENT CONC. (PPMV)	FIELD INF. CONC. SOURCE (PPMV)	FIELD INF. CONC. W/ DIL. (PPMV)	FIELD EFFLUENT CONC. (PPMV)	DILUTION VALVE OPEN (%)	GRO CONV. (%)	SOURCE FLOW (SCFM)	PROCESS FLOW (SCFM)	MANIFOLD VACUUM (IN H ₂ O)	COMBUST-ION TEMP. (DEG F)	EFFLUENT TEMP. (DEG F)	CUMULATIVE HC REMOVED (LB)	HOURS ON-LINE
11/01/04	*					30	30	20.7	0.0	99.8	172	172	60	1,513	1,513	31,639	24.0
11/02/04	*					30	30	20.7	0.0	99.8	172	172	60	1,513	1,513	31,723	24.0
11/03/04	*					30	30	20.7	0.0	99.8	172	172	60	1,513	1,513	31,807	24.0
11/04/04	TECH	1	1,800	NA	<2.4	643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	31,910	24.0
11/05/04	*					643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	32,012	24.0
11/06/04	*					643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	32,114	24.0
11/07/04	*					643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	32,217	24.0
11/08/04	*					643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	32,319	24.0
11/09/04	*					643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	32,421	24.0
11/10/04	*					643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	32,524	24.0
11/11/04	*					643	643	4.5	0.0	99.9	174	174	60	1,513	1,513	32,626	24.0
11/12/04	TECH					3,138	3,138	3.8	0.0	99.9	177	177	62	1,508	1,508	32,730	24.0
11/13/04	*					3,138	3,138	3.8	0.0	99.9	177	177	62	1,508	1,508	32,834	24.0
11/14/04	*					3,138	3,138	3.8	0.0	99.9	177	177	62	1,508	1,508	32,938	24.0
11/15/04	*					3,138	3,138	3.8	0.0	99.9	177	177	62	1,508	1,508	33,042	24.0
11/16/04	*					3,138	3,138	3.8	0.0	99.9	177	177	62	1,508	1,508	33,147	24.0
11/17/04	*					3,138	3,138	3.8	0.0	99.9	177	177	62	1,508	1,508	33,148	0.3
11/18/04	TECH					623	623	2.2	0.0	99.9	168	168	64	1,524	1,524	33,201	13.0
11/19/04	*					623	623	2.2	0.0	99.9	168	168	64	1,524	1,524	33,300	24.0
11/20/04	*					623	623	2.2	0.0	99.9	168	168	64	1,524	1,524	33,399	24.0
11/21/04	*					623	623	2.2	0.0	99.9	168	168	64	1,524	1,524	33,498	24.0
11/22/04	*					623	623	2.2	0.0	99.9	168	168	64	1,524	1,524	33,531	8.1
11/23/04	TECH	2				4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	33,616	18.0
11/24/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	33,730	24.0
11/25/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	33,843	24.0
11/26/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	33,957	24.0
11/27/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	34,070	24.0
11/28/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	34,184	24.0
11/29/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	34,297	24.0
11/30/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	34,353	11.8
TOTAL POUNDS OF HYDROCARBONS REMOVED SINCE INITIAL START UP											34,353						
TOTAL POUNDS OF HYDROCARBONS REMOVED DURING NOVEMBER, 2004											2,799						
TOTAL HOURS ON-LINE DURING NOVEMBER, 2004											651						

Notes:

1 - Certified sampling.

2 - System shut down automatically due to high temperature failure

TECH - Technician performed O&M on this date

* - Data extrapolated

NA - Not Applicable

GRO - Gasoline Range Organics

TABLE 12c

DAILY OPERATIONAL LOG ATLANTIC RICHFIELD COMPANY STATION No .5110 SYSTEM START-UP DATE: 4/7/04 DECEMBER, 2004																	
DATE	DATA SOURCE	NOTES	LAB INF. CONC. SOURCE (PPMV)	LAB INF. CONC. W/ DIL. (PPMV)	LAB EFFLUENT CONC. (PPMV)	FIELD INF. CONC. SOURCE (PPMV)	FIELD INF. CONC. W/ DIL. (PPMV)	FIELD EFFLUENT CONC. (PPMV)	DILUTION VALVE OPEN (%)	GRO CONV. (%)	SOURCE FLOW (SCFM)	PROCESS FLOW (SCFM)	MANIFOLD VACUUM (IN H2O)	COMBUST-ION TEMP. (DEG F)	EFFLUENT TEMP. (DEG F)	CUMULATIVE HC REMOVED (LB)	HOURS ON-LINE
12/01/04	*					4,879	4,879	6.1	0.0	99.9	193	193	48	1,519	1,519	34,353	0.0
12/02/04	TECH					822	822	1.1	0.0	99.9	193	193	46	1,518	1,518	34,424	15.0
12/03/04	*					822	822	1.1	0.0	99.9	193	193	46	1,518	1,518	34,538	24.0
12/04/04	*					822	822	1.1	0.0	99.9	193	193	46	1,518	1,518	34,651	24.0
12/05/04	*					822	822	1.1	0.0	99.9	193	193	46	1,518	1,518	34,765	24.0
12/06/04	*					822	822	1.1	0.0	99.9	193	193	46	1,518	1,518	34,878	24.0
12/07/04	*					822	822	1.1	0.0	99.9	193	193	46	1,518	1,518	34,992	24.0
12/08/04	*					822	822	1.1	0.0	99.9	193	193	46	1,518	1,518	35,105	24.0
12/09/04	TECH	(1)				364	364	7.3	0.0	99.9	180	180	62	1,506	1,507	35,211	24.0
12/10/04	*					364	364	7.3	0.0	99.9	180	180	62	1,506	1,507	35,317	24.0
12/11/04	*					364	364	7.3	0.0	99.9	180	180	62	1,506	1,507	35,423	24.0
12/12/04	*					364	364	7.3	0.0	99.9	180	180	62	1,506	1,507	35,529	24.0
12/13/04	*					364	364	7.3	0.0	99.9	180	180	62	1,506	1,507	35,635	24.0
12/14/04	*					364	364	7.3	0.0	99.9	180	180	62	1,506	1,507	35,740	24.0
12/15/04	*					364	364	7.3	0.0	99.9	180	180	62	1,506	1,507	35,846	24.0
12/16/04	TECH	(1)	1,700	NA	2.2	1,438	1,438	8.5	0.0	99.9	176	176	63	1,511	1,511	35,944	23.9
12/17/04	*					1,438	1,438	8.5	0.0	99.9	176	176	63	1,511	1,511	36,041	24.0
12/18/04	*					1,438	1,438	8.5	0.0	99.9	176	176	63	1,511	1,511	36,139	24.0
12/19/04	*					1,438	1,438	8.5	0.0	99.9	176	176	63	1,511	1,511	36,237	24.0
12/20/04	*					1,438	1,438	8.5	0.0	99.9	176	176	63	1,511	1,511	36,335	24.0
12/21/04	*					1,438	1,438	8.5	0.0	99.9	176	176	63	1,511	1,511	36,432	24.0
12/22/04	*					1,438	1,438	8.5	0.0	99.9	176	176	63	1,511	1,511	36,530	24.0
12/23/04	TECH					1,206	1,206	6.9	0.0	99.9	197	197	61	1,512	1,512	36,636	23.3
12/24/04	*					1,206	1,206	6.9	0.0	99.9	197	197	61	1,512	1,512	36,746	24.0
12/25/04	*					1,206	1,206	6.9	0.0	99.9	197	197	61	1,512	1,512	36,855	24.0
12/26/04	*					1,206	1,206	6.9	0.0	99.9	197	197	61	1,512	1,512	36,965	24.0
12/27/04	*					1,206	1,206	6.9	0.0	99.9	197	197	61	1,512	1,512	37,074	24.0
12/28/04	*					1,206	1,206	6.9	0.0	99.9	197	197	61	1,512	1,512	37,184	24.0
12/29/04	*					1,206	1,206	6.9	0.0	99.9	197	197	61	1,512	1,512	37,195	2.6
12/30/04	TECH	(2)				1,323	1,323	6.9	0.0	99.9	178	178	61	1,515	1,511	37,270	18.0
12/31/04	*					1,323	1,323	6.9	0.0	99.9	178	178	61	1,515	1,511	37,369	24.0
TOTAL POUNDS OF HYDROCARBONS REMOVED SINCE INITIAL START UP											37,369						
TOTAL POUNDS OF HYDROCARBONS REMOVED DURING DECEMBER, 2004											3,015						
TOTAL HOURS ON-LINE DURING DECEMBER, 2004											683						

Notes:

- 1 - Certified sampling.
- 2 - System shut down automatically due to wet flame rod assembly. Restarted system

TECH - Technician performed O&M on this date

* - Data extrapolated

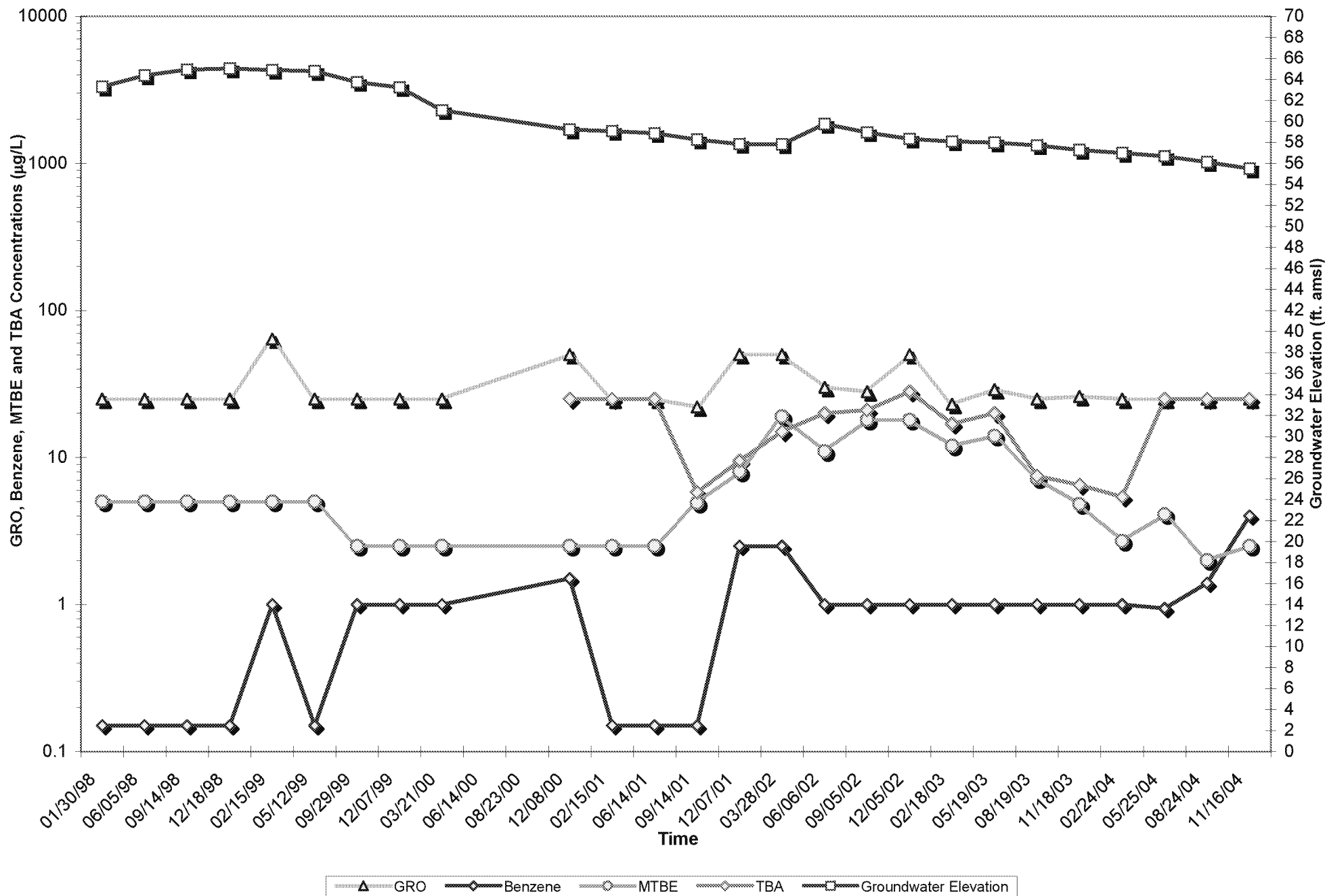
NA - Not Applicable

GRO - Gasoline Range Organics

GRAPHS

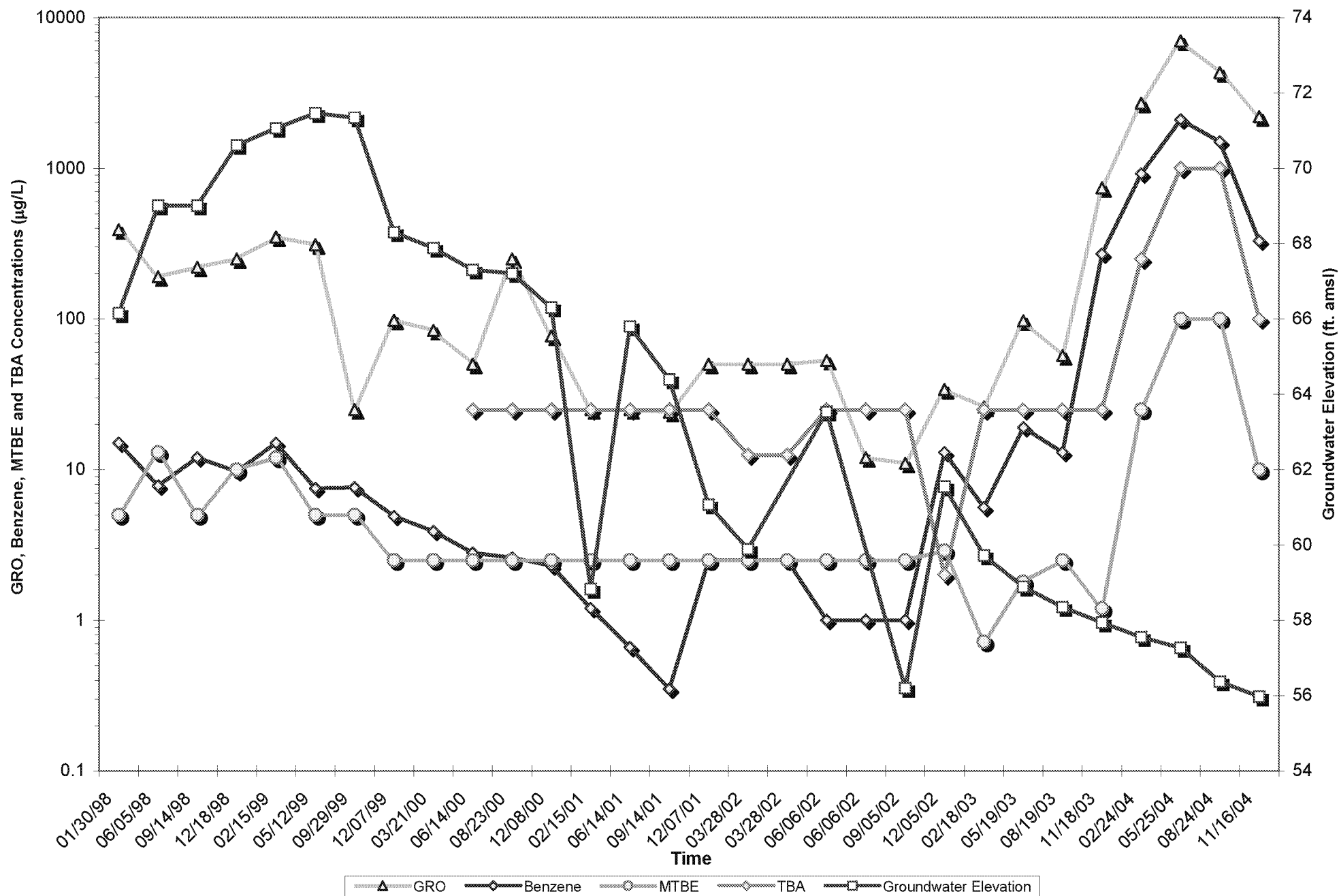
Note: Non-detect (ND) graphed at one-half detection limits per US-EPA protocols. Refer to Table 1 for source data.

GRAPH 1
MW-A1 HYDROGRAPH
ARCO STATION NO. 5110



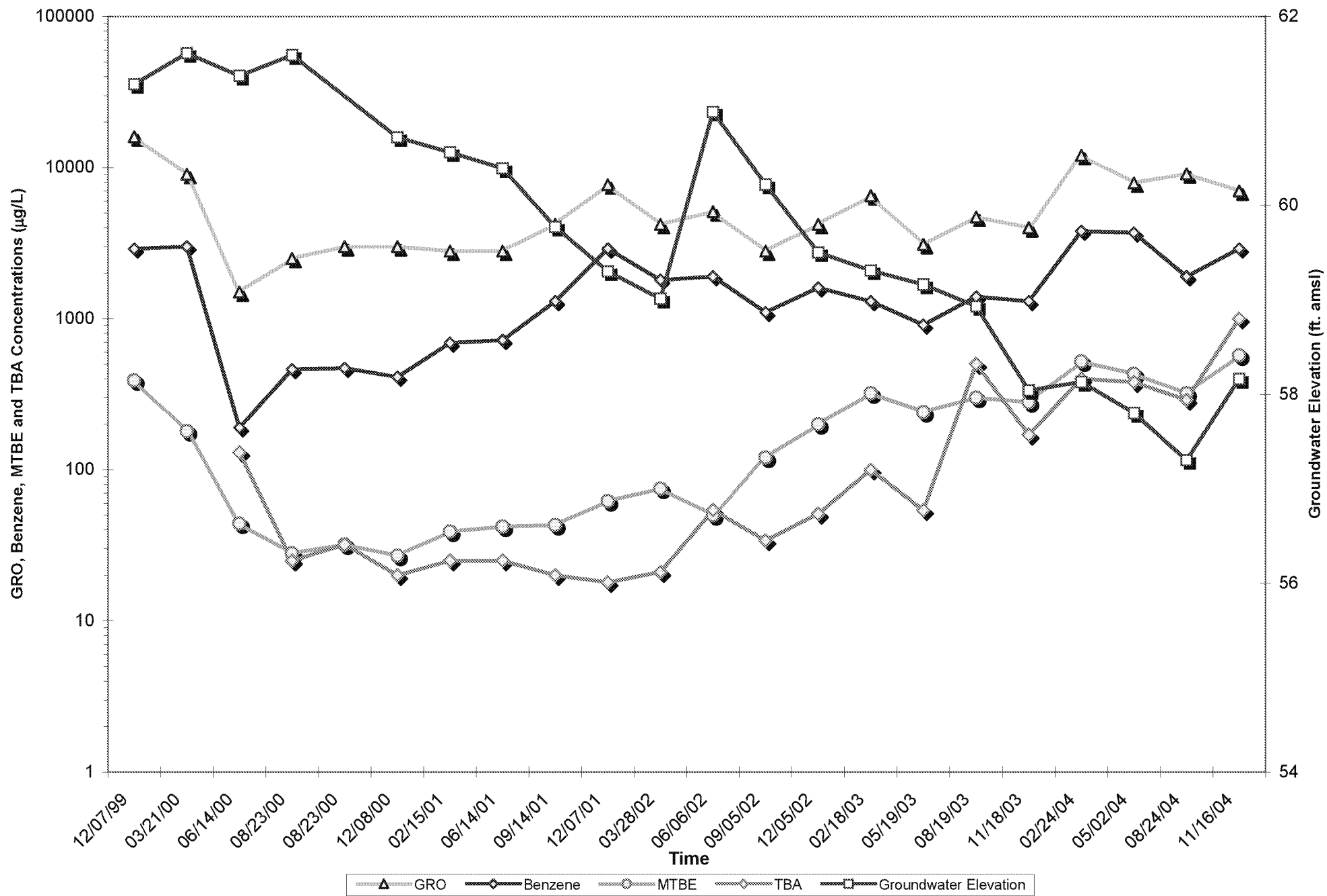
Note: Non-detect (ND) graphed at one-half detection limits per US-EPA protocols. Refer to Table 1 for source data.

GRAPH 2
ARCO STATION NO. 5110
MW-A2 HYDROGRAPH



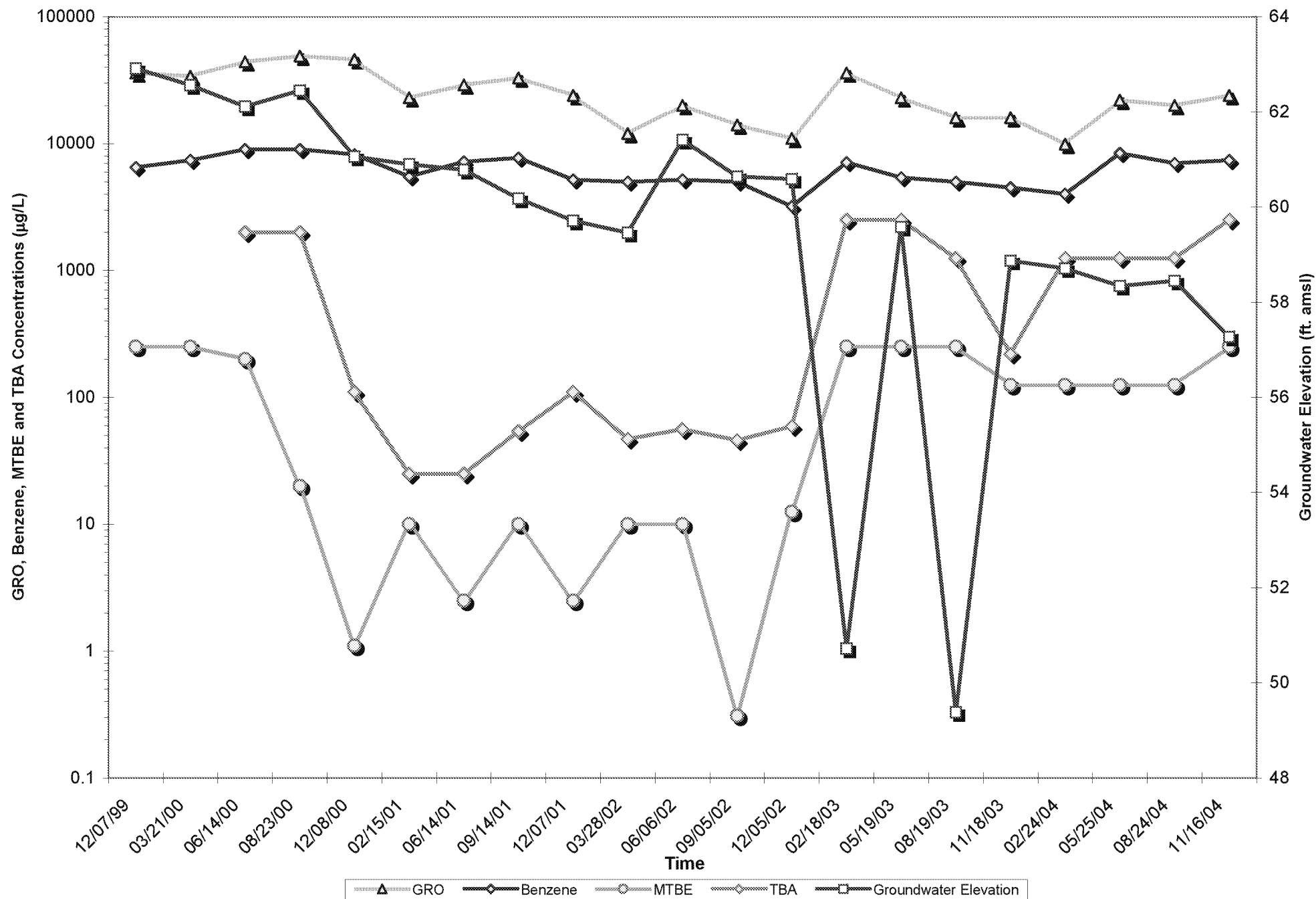
Note: Non-detect (ND) graphed at one-half detection limits per US-EPA protocols. Refer to Table 1 for source data.

GRAPH 3
ARCO STATION NO. 5110
MW-A3 HYDROGRAPH



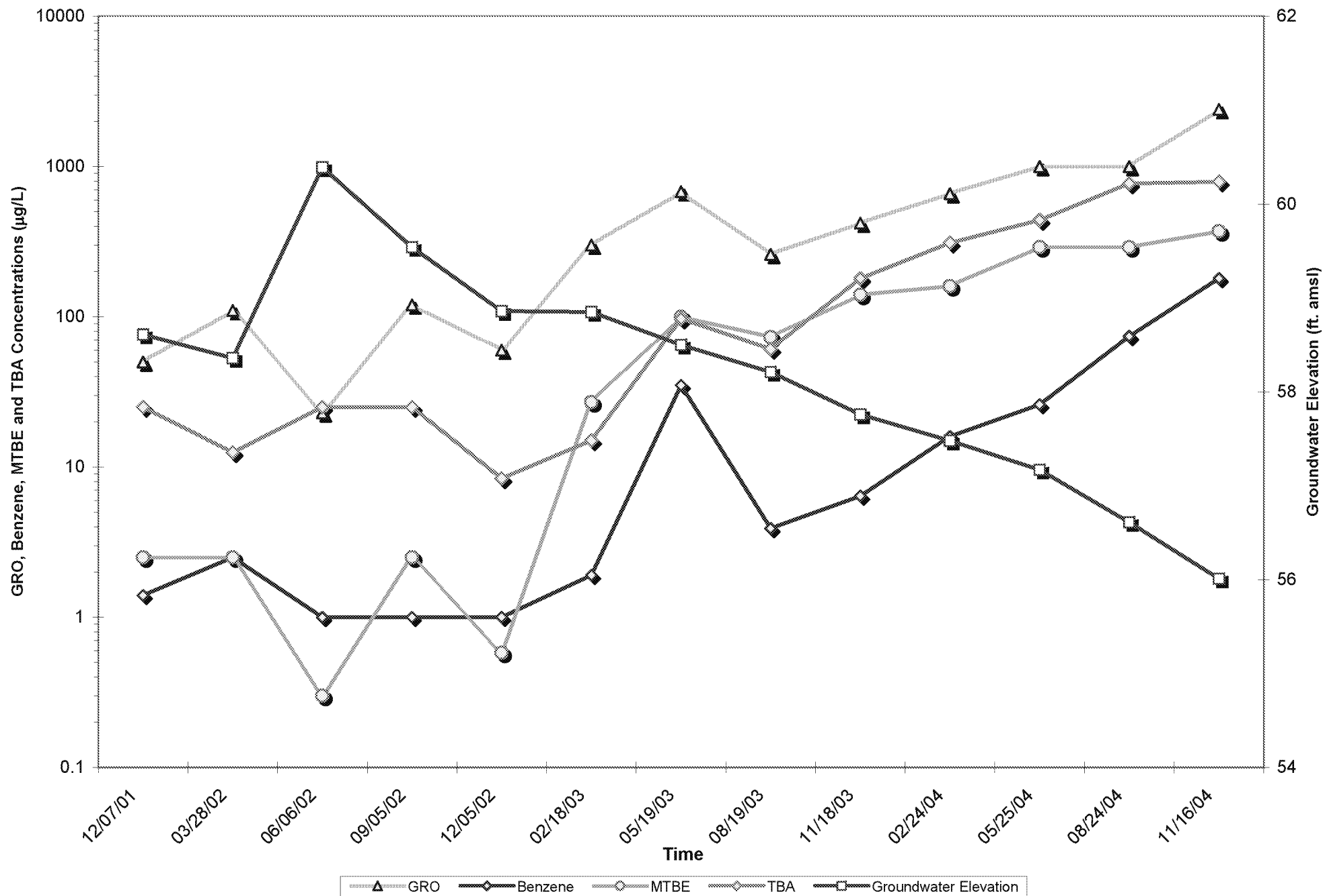
Note: Non-detect (ND) graphed at one-half detection limits per US-EPA protocols. Refer to Table 1 for source data.

GRAPH 4
ARCO STATION NO. 5110
MW-A4 HYDROGRAPH



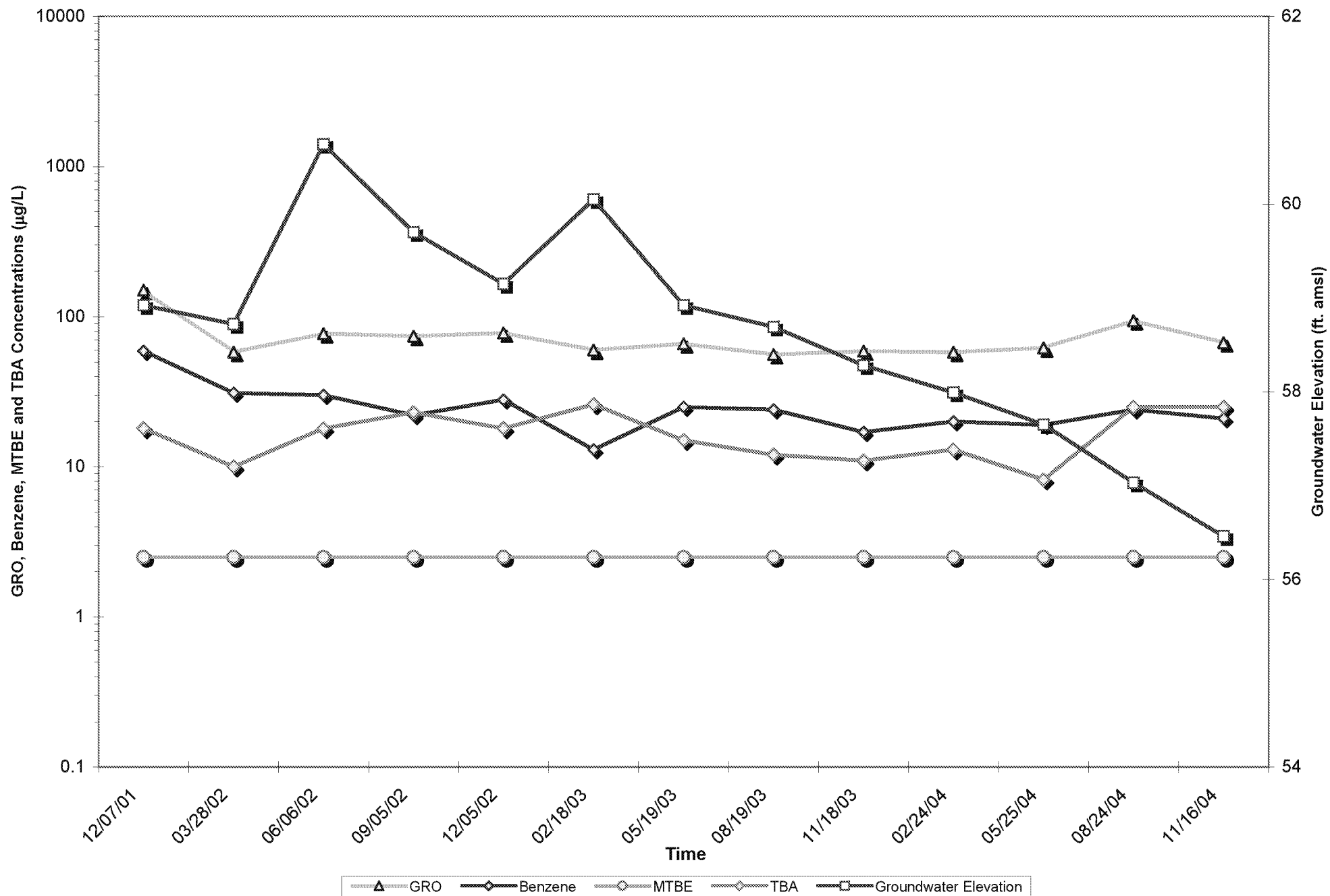
Note: Non-detect (ND) graphed at one-half detection limits per US-EPA protocols. Refer to Table 1 for source data.

GRAPH 5
ARCO STATION NO. 5110
MW-A5 HYDROGRAPH



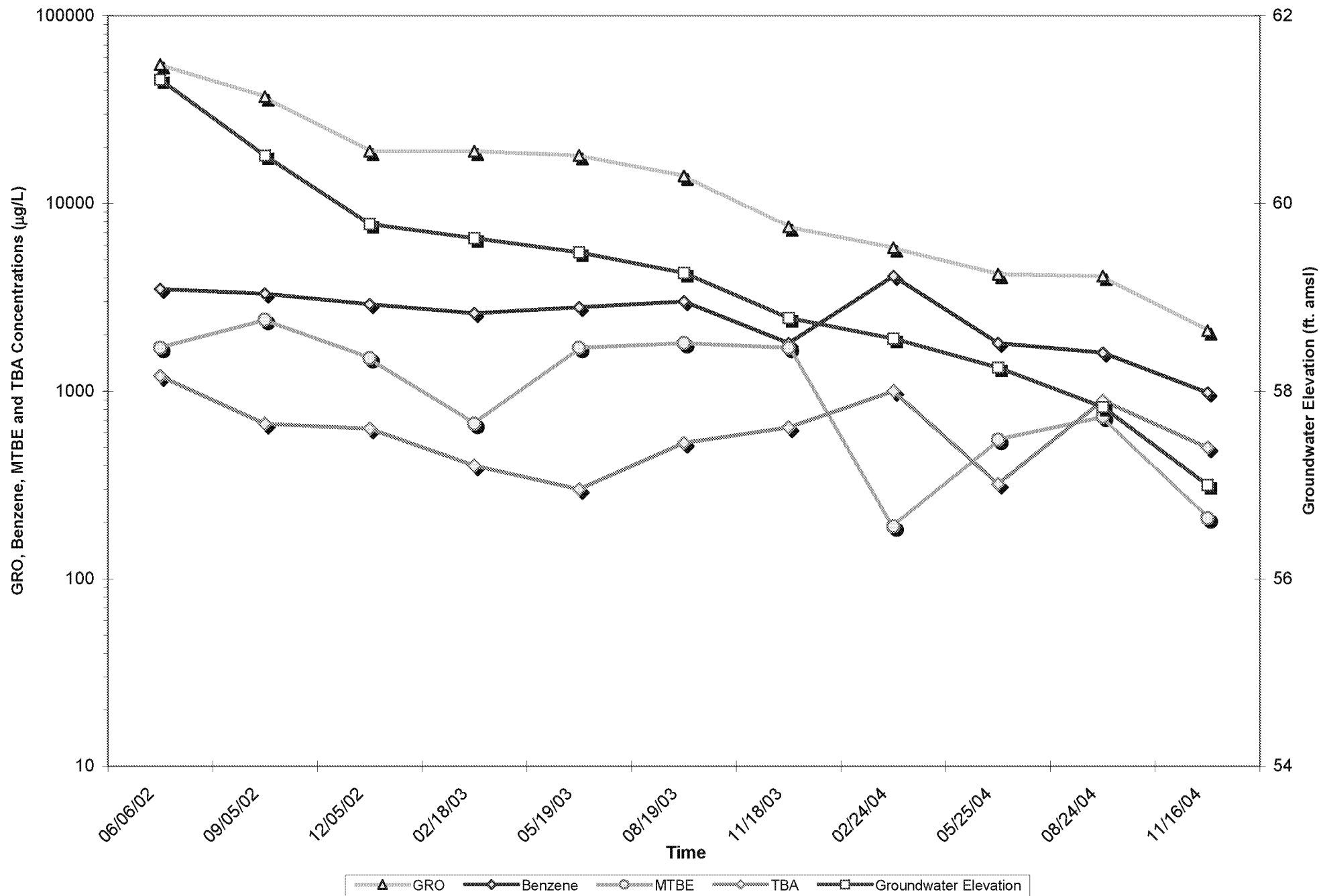
Note: Non-detect (ND) graphed at one-half detection limits per US-EPA protocols. Refer to Table 1 for source data.

GRAPH 6
ARCO STATION NO. 5110
MW-A6 HYDROGRAPH



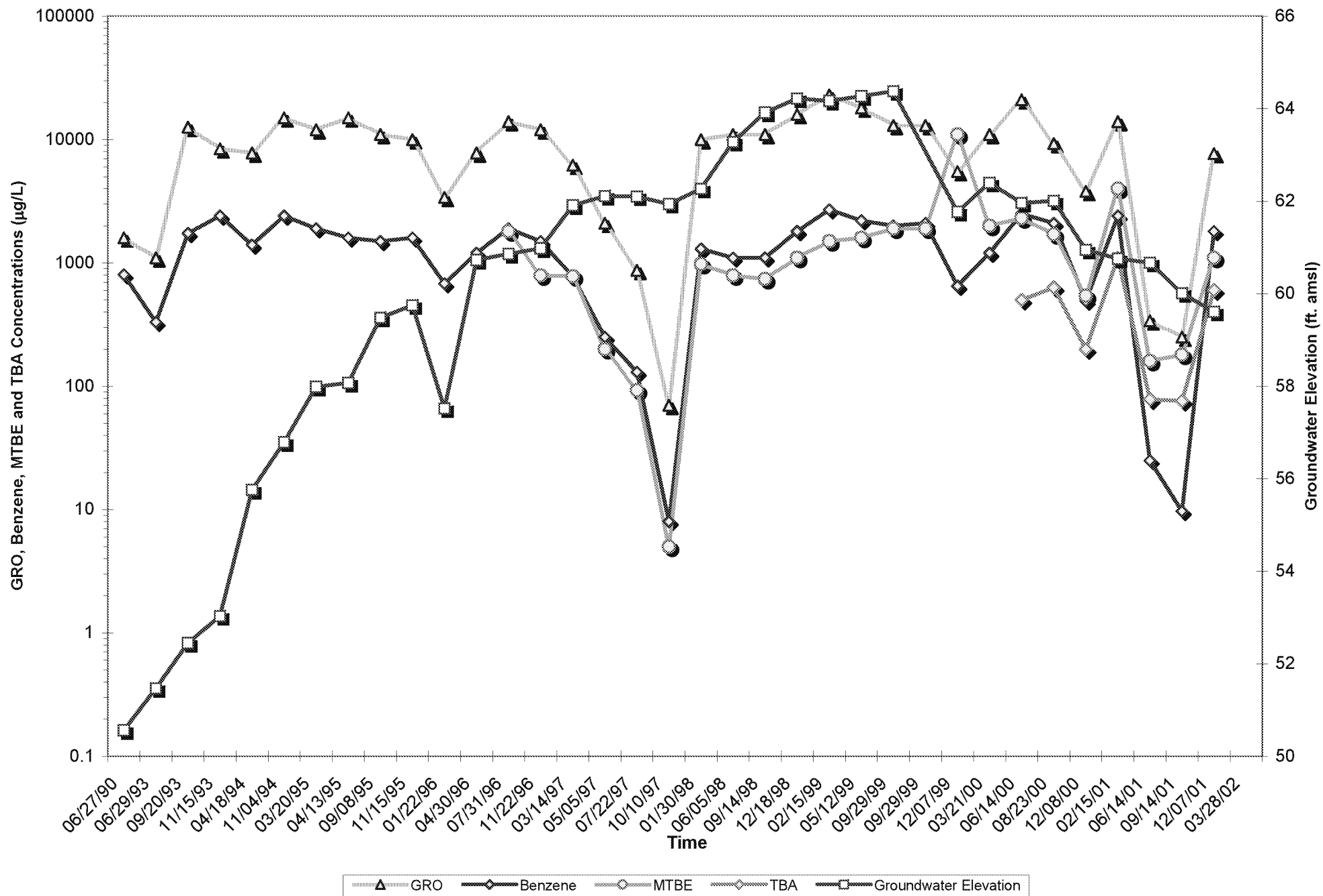
Note: Non-detect (ND) graphed at one-half detection limits per US-EPA protocols. Refer to Table 1 for source data.

GRAPH 7
ARCO STATION NO. 5110
MW-A7 HYDROGRAPH



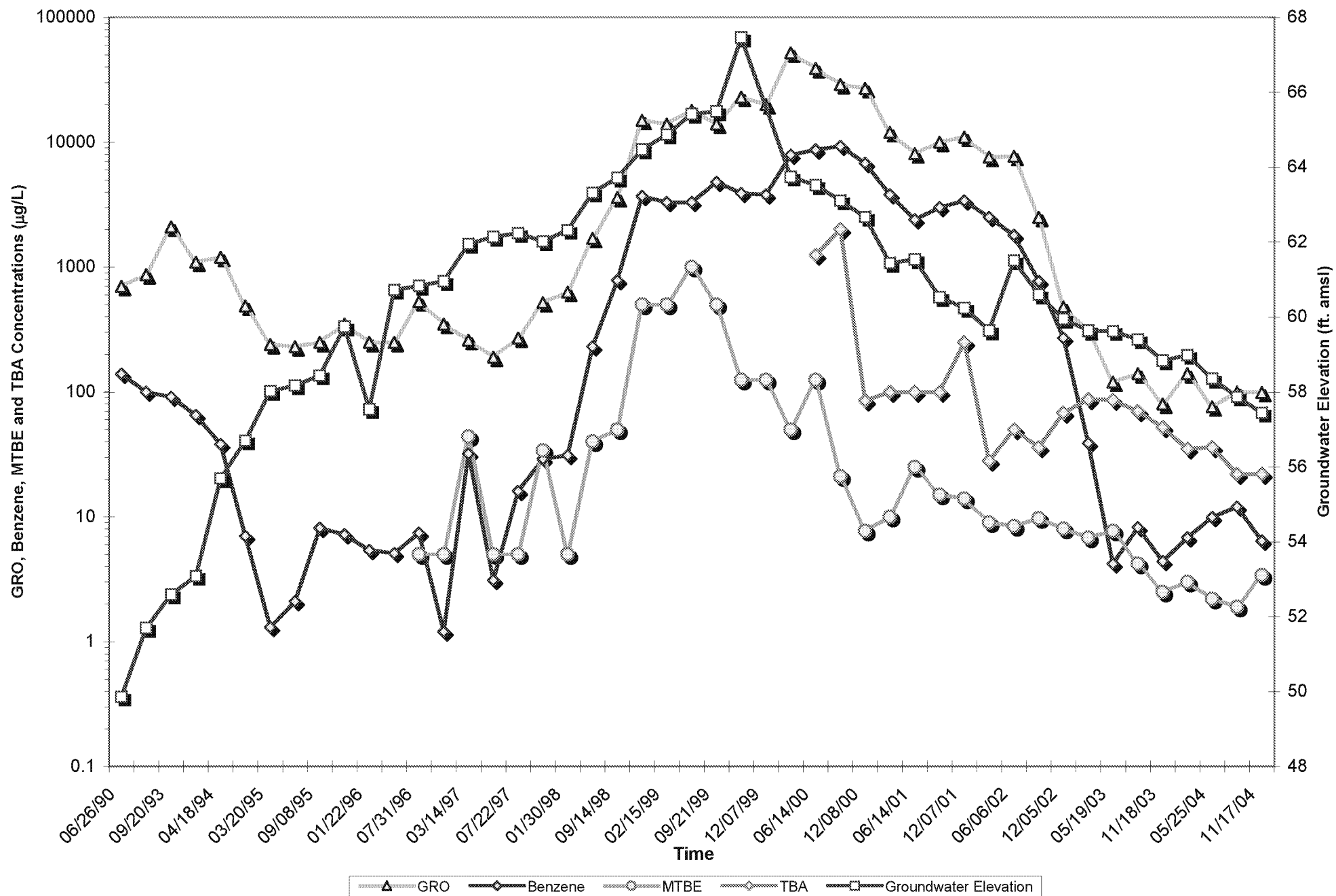
Note: Non-detect (ND) graphed at one-half detection limits per US-EPA protocols. Refer to Table 1 for source data.

GRAPH 8
ARCO STATION NO. 5110
D-1 (Abandoned) HYDROGRAPH



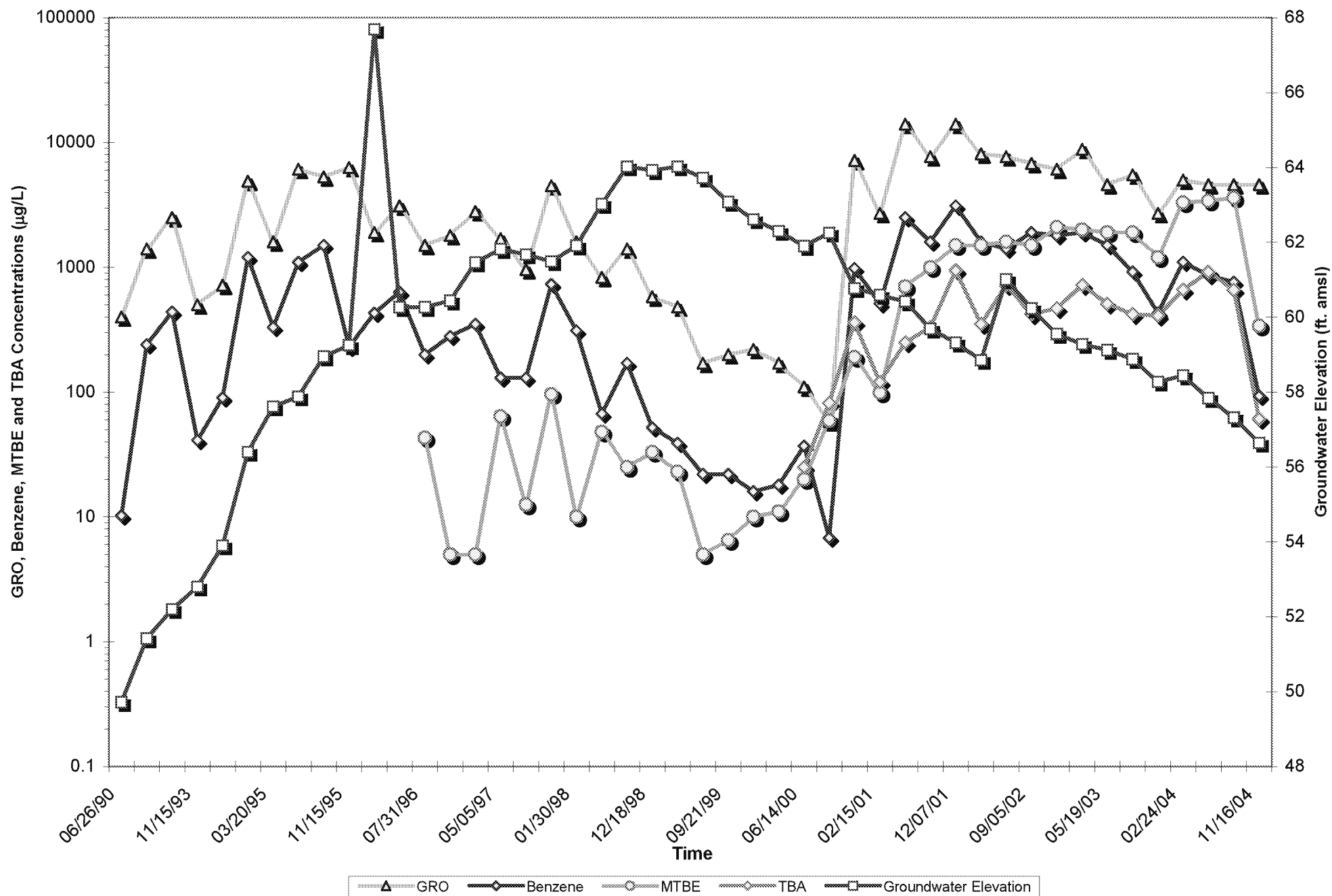
Note: Non-detect (ND) graphed at one-half detection limits per US-EPA protocols. Refer to Table 1 for source data.

GRAPH 9
ARCO STATION NO. 5110
MW-19 HYDROGRAPH



Note: Non-detect (ND) graphed at one-half detection limits per US-EPA protocols. Refer to Table 1 for source data.

GRAPH 10
ARCO STATION NO. 5110
MW-20 HYDROGRAPH



APPENDIX A

Los Angeles Regional Water Quality Control Board Correspondence



Winston H. Hickox
Secretary for
Environmental
Protection

California Regional Water Quality Control Board Los Angeles Region

Over 50 Years Serving Coastal Los Angeles and Ventura Counties

Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.swrcb.ca.gov/rwqcb4>



Gray Davis
Governor

February 28, 2003

Mr. Ralph Moran
ARCO Products Company
P.O. Box 5077
Buena Park, CA 90622

IMPLEMENTATION OF FINAL DRAFT GUIDELINES FOR INVESTIGATION AND CLEANUP OF MTBE AND OTHER OXYGENATES: 1. DEVELOPMENT OF PRELIMINARY SITE CONCEPTUAL MODEL; 2. INTERIM REMEDIAL ACTION REPORT; 3. SITE CHARACTERIZATION REPORT; 4. FINAL REMEDIAL ACTION PLAN; AND 5. PERIODIC PROGRESS, UPDATE, AND MONITORING REPORTS.

ARCO #5110

5731 FIRESTONE BOULEVARD, SOUTH GATE (FILE NO. I-12074) (Priority B2)

Dear Mr. Moran:

BACKGROUND

Methyl tertiary butyl ether (MTBE) has been used as an octane booster in the United States since the late 1970's and added to gasoline to comply with Clean Air Act mandates since 1979. The use of MTBE increased dramatically in the early 1990's as a result of Clean Air Act Amendment requirements for reformulated gasoline. Although MTBE in gasoline helps lessen air pollution, it has become a significant contaminant in groundwater. Relative to other fuel hydrocarbons, MTBE has a high solubility in water, a low retardation rate in groundwater aquifers, and is slow to biodegrade. These properties, combined with its high percentage in gasoline (11% to 15%), cause the potential for high source area concentrations, long plumes in groundwater, and long residence times in the subsurface environment. MTBE also has taste and odor characteristics that can impair water quality at very low concentrations. There have been impacts on drinking water wells at dozens of sites throughout California. Most notably, in the greater Los Angeles area, within the Charnock Sub-Basin, a primary local source of drinking water for the City of Santa Monica and the Southern California Water Company.

Governor Davis issued Executive Order D-5-99 on March 25, 1999, and signed Senate Bill 989 on October 8, 1999. These documents recognize that if not managed properly, MTBE can cause significant adverse impacts to current and future beneficial uses of ground and surface waters. As a result, Final Draft Guidelines for Investigation and Cleanup of MTBE and Other Oxygenates (Final Draft Guidelines) have been developed by the State Water Resources Control Board, Division of Clean Water Programs-Underground Storage Tank Program. The Final Draft Guidelines (copy attached) are intended to assist managers and staff at state and local regulatory agencies with the task of overseeing the investigation and cleanup of sites where there have been or may have been releases of MTBE-laden petroleum fuels or other oxygenates [i.e., tertiary butyl alcohol (TBA), ethyl tertiary butyl ether (ETBE), di-isopropyl ether (DIPE), tertiary amyl methyl ether (TAME), methanol (MeOH), and ethanol (EtOH)]. The Final Draft Guidelines provide definitions for areas that are most vulnerable to groundwater

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>



Recycled Paper

Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

contamination, provide a priority ranking scheme for oxygenate release sites, outline a decision making framework for determining appropriate actions, and propose a timeframe for completing site management milestones.

The Final Draft Guidelines provide a framework for prioritizing resources to work on sites with MTBE or other fuel oxygenate contamination. A complete description of the seven-step process is contained within the Final Draft Guidelines (Pages 6 through 11). The Los Angeles Regional Water Quality Control Board (LARWQCB) is conservatively interpreting the Final Draft Guidelines, which will result in certain Underground Storage Tank (UST) leak cases being included within higher priorities for investigation and cleanup. During March 2001, the LARWQCB issued directive letters to all sites identified with investigation and cleanup priority of A1 [i.e., all sites less than 1,000 feet to a receptor, sites less than 3,000 feet to a receptor that have failed to provide required test results for MTBE and other fuel oxygenates, selected free product sites, and sites in close proximity to sensitive receptors (e.g., schools)]. In January 2002, the LARWQCB issued directive letters to all sites identified with investigation and cleanup priority of B1 [i.e., all sites greater than 1,000 feet and less than 3,000 feet from a receptor, selected free product sites, sites in close proximity to sensitive receptors, and/or sites containing high concentrations of oxygenates]. Now, we have reviewed the information contained in the case file for this site and have assigned an initial investigation and cleanup priority of B2 to this site [i.e., all sites greater than 1,000 feet and less than 3,000 feet from a receptor, with or without MTBE/oxygenates detection].

IMPLEMENTATION OF FINAL DRAFT GUIDELINES

Step 1: Initial Investigation/Scoping

In accordance with Step 1 (Initial Investigation/Scoping), we have reviewed the information contained in the UST case file for the site, including the most recent technical report entitled "Atlantic Richfield Company Quarterly Report" dated Quarter 4, 2002, prepared by SECOR. Based upon our review and evaluation, we find that groundwater beneath the subject site is impacted by petroleum hydrocarbons and/or the gasoline additive MTBE released from UST systems. The site is located within an area determined to be vulnerable to groundwater contamination, as defined in the Final Draft Guidelines. The site overlies an aquifer used as a community water supply and the distance to the closest municipal or domestic supply well (No. 02S12W31Q02S) is approximately 1,825 feet from the site. Based upon this information we have assigned an Initial Investigation Priority Class B2 to the site. You have been identified as the responsible party for the site and, as such, are directed to perform the following corrective action steps:

1. Develop a Preliminary Site Conceptual Model;
2. Develop a technical report detailing the results of all soil and groundwater assessment completed and submit a workplan to complete any remaining soil and/or groundwater investigations necessary to fully define the lateral and vertical extent of any free product or dissolved petroleum hydrocarbon plume(s), to include MTBE or other fuel oxygenate contamination onsite and offsite;

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>



Recycled Paper

Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

3. Develop a technical report detailing the results of any corrective actions completed and submit a workplan to perform any interim cleanup necessary to contain or control the spread or migration of any residual contamination;
4. Complete an evaluation to estimate plume travel time;
5. Determine a final cleanup remedy;
6. Perform quarterly groundwater monitoring and provide updates to the Site Conceptual Model; and
7. Perform a verification-monitoring program.

All steps are to be developed and performed on an expedited schedule to reduce any adverse impacts to water quality resulting from UST system leaks that have resulted at the site.

Step 2: Develop Preliminary Site Conceptual Model/Assign Investigation Priority Classification

Develop a Preliminary Site Conceptual Model (PSCM) Report consistent with the Final Draft Guidelines-Appendix C (Page 15). As stated above, we have already assigned an Initial Investigation Priority Class B to the site. Under this Initial Investigation Priority and for the purpose of developing the PSCM, the travel time to the nearest production well/receptor is conservatively estimated to be greater than one year and less than 3 years. The technical report (Preliminary Site Conceptual Model) containing the results of this evaluation shall be submitted to this Regional Board by **July 15, 2003**.

The PSCM must incorporate, at a minimum; all the components listed under Appendix C of the "Final Draft Guidelines for Investigation and Cleanup of MTBE and Other Oxygenates" dated March 27, 2000. The PSCM should provide a detailed written and graphical representation of the release scenario, site characteristics (geology, hydrogeology, isoconcentration contour maps for TPH, benzene and MTBE etc.) and the likely distribution of chemicals at the site. It should also identify all pathways for impact to potential receptors from potential sources through transport of chemicals in air, soil and water. The information contained within the PSCM for site assessment activities is critical in making determinations on the extent of assessment completed and whether any additional hydrogeologic assessment work is necessary at the site.

If the Site Characterization Report indicates that additional soil borings or groundwater monitoring wells are needed to fully define the extent of soil and/or groundwater contamination, then a workplan to complete any remaining assessment must be incorporated into your revised PSCM. The same type of evaluation is required for any cleanup action taken to date or needed to implement a final cleanup plan at the site. Technical reports previously submitted to the Regional Board detailing the results of any soil and/or groundwater assessment, periodic monitoring, or cleanup do not have to be resubmitted. However, you need to repackage the information, so that the PSCM is a complete stand-alone document. Periodic updates to the PSCM are required on a quarterly basis as required in Step 5 below and as defined in Step 5 of the Final Draft Guidelines.

Step 3: Interim Remedial Action

Develop an Interim Remedial Action (IRA) Report detailing the results of any cleanup actions completed to date. At a minimum, the site IRA should:

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>



Recycled Paper

Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

1. Provide documentation that all existing UST systems operating do not have any ongoing releases. Use the Final Draft Guidelines, Appendix D (Finding Leaks in Tank Systems) as a guide for completing this evaluation;
2. Provide realistic estimates of the total volume(s) of fuels released;
3. Identify all method(s) used for cleanup of petroleum hydrocarbon fuel contamination (i.e., excavation, free product removal, vapor extraction, pump and treat, etc.). Identify any active cleanup systems in place, operational or not, together with complete details on system design, operation status, and cleanup effectiveness;
4. Provide the total mass in pounds for total petroleum hydrocarbon gasoline fuels (TPH_G), total petroleum hydrocarbon diesel fuels (TPH_D), benzene, toluene, ethylbenzene, and xylenes (BTEX), MTBE, and other fuel oxygenates removed from the subsurface from all cleanup operations employed to date; and
5. Identify the IRA that should be implemented to further reduce the residual mass of petroleum hydrocarbon fuels, BTEX compounds, MTBE, and other oxygenates in soil, groundwater and/or vapor phase beneath the site. The IRA should be compatible with and developed into a final remedial action plan for the site.

The technical report (Interim Remedial Action) containing the results of the IRA evaluation together with a detailed workplan to conduct any interim remedial action measures necessary to control or contain the spread of residual contamination shall be submitted to this Regional Board by **July 15, 2003**.

Step 4: Site Characterization/Determine Plume Travel Time

Develop a comprehensive Site Characterization (SC) Report detailing the results of all soil and groundwater assessments completed at the site. At a minimum, the report should include:

1. Site maps depicting the locations of all soil samples, soil test borings, groundwater monitoring wells, vapor extraction, or air sparging wells;
2. A detailed location map of the area surrounding the site to include streets, property locations and land uses (i.e., residential, commercial or industrial with site name, etc.) 250 feet upgradient, 250 feet lateral to the direction of groundwater flow, and a minimum of 500 feet downgradient of any identified contamination plume(s);
3. Soil boring logs and well drilling logs from prior work;
4. Develop scaled lithologic cross sections for the site based upon the existing soil and groundwater data/information. A minimum of three cross sections shall be developed from soil sampling programs and from the installation of groundwater monitoring wells and/or vapor wells. Cross sections shall provide the lithologic column with Unified Soil Classification System abbreviations and symbols;
5. Scaled groundwater contour maps depicting the direction of groundwater flow and gradient across the subject site. If the groundwater flow direction fluctuates over time, then historical groundwater contour maps reflecting these changes shall be provided;
6. Groundwater contaminant plume maps for TPH_G, TPH_D, BTEX, MTBE, and for all fuel oxygenates detected shall be illustrated in plan view and contain constituent concentrations;
7. A tabular summary showing: monitoring well identification number, monitoring well screened and blank intervals, completion depths, survey elevations, survey reference point, slot size(s), annular seal interval, water elevation ranges, and free product thickness, if any; and

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>



Recycled Paper

Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

8. A tabular data summary showing all historical soil and groundwater chemical and physical data to date.

The technical report (Site Characterization Report) detailing the results of all soil and groundwater assessments completed together with a workplan to conduct any supplemental hydrogeologic assessment needed to fully define the extent of any remaining free product and/or dissolved petroleum hydrocarbons, including oxygenates, to non-detect levels, shall be submitted to this Regional Board by **July 15, 2003**.

Determine Plume Travel Time

Acceptable methods that can be used to estimate plume travel time to reach a receptor should include the application of mainstream or industry-recognized fate and transport analytical models (e.g., Domenico Analytical Solution, 1987; Finite-Mass Advection/Dispersion Analytical Model by Fried, 1975; Freeze and Cherry 1975; and Bear 1972). Alternatively, advection/dispersion analytical models in Excel format developed by Regional Board staff may also be used (applicable to cases with a one-time release or continuous source release) and are available on our website (<http://www.swrcb.ca.gov/rwqcb4> under LARWQCB Programs – UST - Models). Extensive or detailed modeling effort is not required nor is that the objective of this phase of the investigation. However, the analytical model used should be calibrated with available site-specific data, using conservative assumptions for mass released, source area, source concentration, groundwater velocity, groundwater direction (constant), dispersivities, decay rate, etc. Available site-specific data on geology or hydrogeology may be quite useful in this regard. For example, groundwater site characterization evaluation, type of soil and aquifer materials, and uninterrupted vertical profile of site stratigraphy may be used together to make conservative estimates of groundwater velocity. A technical report (as an integral part of the Site Conceptual Model Report) on this phase of the investigation shall, at a minimum include:

1. Detailed documentation of the analytical model used, including its limitations, conditions, and assumptions;
2. Detailed descriptions and layouts of the process used to arrive at the model conclusions and justification for the model assumptions applied, including literature sources;
3. Detailed and extensive discussions on model conclusions;
4. Recommendations on any additional site work that can reduce model uncertainties and further refine the Site Conceptual Model;
5. Any site- or region-specific data applied during the modeling process, including hydrogeologic data and historical soil and groundwater analytical data to date (if applicable); and
6. Any information on atypical site-specific conditions that may cause solutions to the analytical model to be unrealistic or less-conservative, such as:
 - a. Whether the site is near an area with aggressive pumping (characteristic of municipal or drinking water wells) which can alter the natural flow of water and thus affect the direction of groundwater flow and velocity;
 - b. The presence of heterogeneous aquifer materials that may cause contaminants to travel at greater velocities than the flow pathway applied for the analytical model (e.g. the existence of fractured rock and limestone caverns);

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>



Recycled Paper

Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

- c. The existence of conduits and geologic faults, and
- d. Multiple or continuous releases; and releases from different locations, that can create multiple sources or cause increases in contaminant source concentrations.

The technical report containing an evaluation to estimate Plume Travel Time, in accordance with the guidance provided above, shall be submitted to this Regional Board by **October 15, 2003**.

Step 5: Update Site Conceptual Model/Assign Cleanup Priority Classification

Update Site Conceptual Model

This step provides for the update to the PSCM on a periodic basis, to incorporate any new and/or updated information or data (i.e., results of any additional assessment and/or any remedial activities completed during the reporting period, a complete discussion of current site conditions, a complete discussion and trend analysis on analytical groundwater data, and provide a technical Workplan for additional assessment and/or cleanup as determined by a review and evaluation of historical and current data, etc.). Quarterly technical reports shall be submitted to update the PSCM developed as part of Step 2. The SCM validation process shall be initiated starting with the quarter after the PSCM is established. The first update to the PSCM is due to this Regional Board by **October 15, 2003**, for the July through September 2003 quarter. The Site Conceptual Model Update is a stand-alone document that provides a complete update to the PSCM. The Site Conceptual Model Update must contain all the components that are currently required in the Quarterly Groundwater Monitoring Reports, therefore, a separate Quarterly Groundwater Monitoring Report is not required.

Step 6: Corrective Action/Remediation

The need for performing active cleanup may vary based upon many factors (e.g., release history, mass released into the environment, hot spot areas, site specific and regional geology, and interim cleanup actions implemented, etc.). As stated above in Step 3, a technical report containing the results of the IRA evaluation together with a workplan to conduct any interim remedial action necessary to control or contain the spread of residual contamination at the subject site shall be submitted to this Regional Board by **July 15, 2003**. In order to reduce any ongoing threat to water quality and potential impacts to nearby sensitive receptors from UST releases, a technical report containing a Final RAP, together with a time schedule for implementation shall be developed and submitted to this Regional Board by **January 15, 2004**.

Step 7: Verification Monitoring

Verification monitoring is an integral part of performing interim and final cleanup remedies at UST release sites. These monitoring programs will be necessary in order to determine whether any interim and/or final RAP implemented has achieved its intended purpose and will be required for all sites to determine the effectiveness of remedial actions implemented. The nature and scope of the verification-monitoring program shall be determined subsequent to

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>



Recycled Paper

Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

completing full implementation of the RAP and shall be approved by this Regional Board prior to implementation.

LANDOWNER OR IMPACTED SITE NOTIFICATION REQUIREMENTS

Additionally, pursuant to recent changes of the California Health and Safety Code (section 25299.37.2) and Division 7 of the Porter Cologne Water Quality Control Act under Assembly Bill 681, this Regional Board is required to notify all current fee title holders of record for the site or sites impacted by releases from underground storage tanks prior to considering corrective action and cleanup or case closure.

If site assessment and/or monitoring data provided for corrective action work ongoing at the site indicate that release(s) from the underground storage tank systems have impacted offsite property(ies), then please provide the name, mailing address, and phone number for all record fee title holders for the site and any offsite property(ies) impacted by releases from the subject site, together with a copy of the county record of current ownership (grant deed or deed of trust), available from the County Recorder's Office, for each property affected, or by completing this Regional Board's "Certification Declaration for Compliance with Fee Title Holder Notification Requirements," (copy attached) for each site. **If this information has been provided in the past, then you need not provide it again.** Copies of all technical reports required above together with any periodic updates are to be sent directly to the property owner of the site and to any other property owner(s) impacted by UST releases from the site. The cover letter transmitting your technical reports to this Regional Board shall state that the technical reports were sent directly to all property owner(s) of the site as well as any offsite property owner impacted by the UST release(s). The cover letter shall provide a list of all property owners sent technical reports and the date the technical reports were sent.

NEW REGULATORY REQUIREMENT FOR ELECTRONIC SUBMISSION OF LABORATORY DATA TO THE STATE GEOTRACKER INTERNET DATABASE

On June 28, 2001, the State Water Resources Control Board-Underground Storage Tank Program manager, Mrs. Liz Haven, sent you a letter informing you of the new requirements for submission of electronic laboratory data for Underground Storage Tank Program reports. These requirements are contained in emergency regulations (CCR Title 23, Chapter 16, Article 12, Sections 2729 and 2729.1) recently adopted by the State Water Resources Control Board (Board), and became effective September 1, 2001. The Board adopted these regulations to implement Assembly Bill 2886 (Chapter 727, Statutes of 2000, "AB 2886"). The regulations and other background information are available on the Internet by going to <http://geotracker.swrcb.ca.gov> and clicking on "AB 2886". The emergency regulations (Water Code Sections 13195-13198) require persons to ensure electronic submission of laboratory data (i.e. soil or water chemical analysis) and locational data (i.e. location and elevation of groundwater monitoring wells), via the Internet to the SWRCB's GeoTracker database.

In accordance with the above regulations, you are required to submit all future laboratory data over the Internet in the Electronic Deliverable Format to the SWRCB's GeoTracker database for any soil and/or groundwater samples obtained after September 1, 2001. This would include any

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>



Recycled Paper

Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

sampling completed for underground storage tank system removal, site assessment activities, periodic groundwater monitoring, and post cleanup verification sampling. In accordance with the above regulations, you are also required to submit locational data for all groundwater monitoring wells (i.e., latitude, longitude, and elevation survey data) together with groundwater information (i.e., elevation, depth to free product, monitoring well status, etc.) and a site map commencing January 1, 2002. Hard copy paper reports are still required.

REPORTING REQUIREMENTS

The Final Draft Guidelines, Appendix B (Technical References) contains a partial listing of documents related to site investigation and remediation that can be used for development of workplans required by this Regional Board. The technical reports shall be submitted to this Regional Board according to the schedule contained in Table 1-Technical Report Type and Due Dates listed below. The technical reports for items: 1-[Preliminary Site Conceptual Model (PSCM) Report]; 2-[Interim Remedial Action (IRA) Report and Workplan]; and 3-[Site Characterization (SC) Report and Workplan] identified in Table 1 below must be submitted as a single stand alone technical report. **Pursuant to section 13267(b) of the California Water Code, failure to submit the required technical report acceptable to the Executive Officer, by the due dates specified, may result in the imposition of civil liability penalties by this Regional Board of up to \$1,000.00 per day for each day each technical report is not received pursuant to section 13268 of the California Water Code. This Regional Board can assess these civil liability penalties at any time after the due dates specified below and without further warning.**

Table 1-Technical Report Type and Due Dates

Technical Report Type ^{1,2,3,4}	Due Dates
1. Preliminary Site Conceptual Model (PSCM) Report (Step 2-Final Draft Guidelines)	July 15, 2003
2. Interim Remedial Action (IRA) Report and Workplan (Step 3-Final Draft Guidelines)	July 15, 2003
3. Site Characterization (SC) Report and Workplan (Step 4-Final Draft Guidelines)	July 15, 2003
4. Estimate of Plume Travel Time (Step 4-Final Draft Guidelines)	October 15, 2003 (Yearly thereafter by October 15)
5. Update Site Conceptual Model (SCM) Reports (Step 5-Final Draft Guidelines)	October 15, 2003 (Quarterly thereafter by the following dates: January 15, April 15, July 15, and October 15)
6. Final Remedial Action Plan (RAP) (Step 6-Final Draft Guidelines)	January 15, 2004
7. Quarterly Monitoring and Progress Reports ⁵	October 15, 2003 (Quarterly thereafter by the following dates: January 15, April 15, July 15, and October 15)

¹-At a minimum, all workplans and final reports shall conform to the Guidelines for Report Submittals published by the Los Angeles County Department of Public Works and the California Underground Storage Tank Regulations.

²-All workplans are to contain an appropriate Health and Safety Plan commensurate with the level of work to be completed.

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>



Recycled Paper

Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

Mr. Moran
ARCO #5110

- 9 -

February 28, 2003

³-All analytical testing and sampling shall conform to the Leaking Underground Storage Tanks Program-Update Laboratory Testing Requirements, dated June 22, 2000.

⁴-All technical reports shall be prepared by or under the direction of a registered geologist, certified engineering geologist, or registered civil engineer with appropriate experience.

⁵-Quarterly Groundwater Monitoring and Progress Reports are to be included as part of the Site Conceptual Model Updates.

If you have any questions or need additional information, please call Ms. Heesu Park at (213) 576-6705, or Mr. Gregg Kwey at (213) 576-6702.

Sincerely,

Original Signed by

Dennis A. Dickerson
Executive Officer

Enclosures:

1. Final Draft Guidelines for Investigation and Cleanup of MTBE and Other Oxygenates (March 27, 2000)
2. Guidelines for Report Submittals published by the Los Angeles County Department of Public Works (June 1993)
3. Leaking Underground Storage Tanks Program-Update Laboratory Testing Requirements (June 22, 2000)
4. Leaking Underground Storage Tank Program Certification Declaration for Compliance with Fee Title Holder Notification Requirements

Cc: Robert Sams, Office of Chief Counsel, State Water Resources Control Board
Michael Lauffer, Office of Chief Counsel, State Water Resources Control Board
Hari Patel, State Water Resources Control Board, UST Cleanup Fund
Tim Smith, Los Angeles County DPW, Environmental Programs Division
Bruce Mowry, Water Replenishment District of Southern California
Gareth Roberts, SECOR

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>



Recycled Paper

Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.



Winston H. Hickox
Secretary for
Environmental
Protection

California Regional Water Quality Control Board Los Angeles Region

Over 50 Years Serving Coastal Los Angeles and Ventura Counties
Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.swrcb.ca.gov/rwqcb4>



Gray Davis
Governor

August 27, 2003

Mr. Ralph Moran
Atlantic Richfield Company
4 Centerpointe Drive
La Palma, CA 90623

IMPLEMENTATION OF FINAL DRAFT GUIDELINES FOR INVESTIGATION AND CLEANUP OF MTBE AND OTHER OXYGENATES: 1. DEVELOPMENT OF PRELIMINARY SITE CONCEPTUAL MODEL; 2. INTERIM REMEDIAL ACTION REPORT; 3. SITE CHARACTERIZATION REPORT; 4. FINAL REMEDIAL ACTION PLAN; AND 5. PERIODIC PROGRESS, UPDATE, AND MONITORING REPORTS.

ARCO #5110

5731 FIRESTONE BOULEVARD, SOUTH GATE (FILE NO. I-12074) (Priority B2)

Dear Mr. Moran:

We have reviewed your "Remedial Action Plan," dated June 25, 2003, and "Preliminary Site Conceptual Model", dated July 15, 2003, prepared by your consultant, SECOR International, Inc., for the subject site. We would like to acknowledge the overall good job in putting together the Preliminary Site Conceptual Model in accordance with the Appendix C requirements contained within the Final Draft MTBE Guidelines and the workplan submitted for supplemental site assessment and an expanded cleanup program. As we are implementing this new and more comprehensive approach managing high priority leaking underground storage tank cases, we feel strongly that in the end, it will reduce future impacts to water quality, provide for increased protection of sensitive receptors, and reduce the overall cost and time in performing assessment and cleanup activities.

In reference to the above documents, we have the following comments:

I. Corrective Action

Based on the historical Soil Vapor Extraction (SVE) testing and subsurface lithology and hydrogeology, Air Sparging (AS)/SVE is proposed to remove adsorbed-phase hydrocarbons from the former tankpit and dispenser areas and reduce dissolved-phase hydrocarbons. Your consultant proposes installing five AS/SVE wells to implement the remedial system. We concur with your workplan provided the following requirements are met:

1. As already indicated, you are required to submit a Final Remedial Action Plan detailing the results of the interim corrective action and workplan for additional remedial action to this

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>



Recycled Paper

Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

Regional Board by **January 15, 2004**. This report must contain a scaled site-plan map with construction diagram for the existing soil vapor extraction and air sparging wells, and cross section profiles showing these wells, contamination plume, and lithological information. At a minimum, the following parameters must be included in your technical report:

- Scaled map showing the location of all wells and detailed layout of remediation system (i.e., piping and treatment system).
 - Vapor flow rate.
 - Pressure (or vacuum).
 - Hours of system operation.
 - Laboratory test results (in $\mu\text{g/L}$) including QA/QC data.
 - Tabular and graphical summaries of contaminants removed versus time.
 - Contamination mass removal rates and cumulative mass removed.
 - Influent concentrations and concentrations at each vapor extraction well.
2. The undiluted soil vapor samples must be analyzed monthly for total petroleum hydrocarbons in gasoline (TPHg) using EPA Method 8015(M); for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl tertiary butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME) and tertiary butyl alcohol (TBA) using EPA Method 8260B; and for oxygen and carbon dioxide content.

II. General

1. All necessary permits must be obtained from the appropriate agencies prior to the start of work.
2. All work must be performed by or under the direction of a registered geologist, certified engineering geologist, or registered civil engineer. A statement is required in the report that the registered professional in direct responsible charge actually supervised or personally conducted all the work associated with the project. All technical submittals must contain a wet ink signature and seal by one of the registered professionals.
3. All reports must conform to the "Guidelines for Report Submittals" published by the Los Angeles County Department of Public Works.
4. Please notify Ms. Heesu Park at least seven (7) days prior to the start of field work, so she can schedule to be present.
5. Copies of all technical reports are to be sent directly to the fee title holder of the site and to any other property owner(s) impacted by the underground storage tank (UST) releases from the site. The cover letter transmitting your technical reports to this Regional Board shall state that the technical reports were sent directly to all the fee title holder of the site as well as any offsite property owner impacted by the UST release(s). The cover letter shall provide

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>



Recycled Paper

Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

August 27, 2003

a list of all property owners sent technical reports and the date the technical reports were sent.

III. Site Conceptual Model (SCM) Update

In order to implement the final remediation of the petroleum hydrocarbon plume associated with the above referenced site, the Preliminary Site Conceptual Model must be updated on a quarterly basis. You are required to submit the next Site Conceptual Model Update by **October 15, 2003**. Subsequent Site Conceptual Model Updates are to be submitted according to the following schedule:

<u>Reporting Period</u>	<u>Report Due Date</u>
January – March	April 15 TH
April – June	July 15 TH
July – September	October 15 TH
October – December	January 15 TH

The Site Conceptual Model Update is a stand-alone document that provides a complete update to the PSCM. The Site Conceptual Model Update must contain all the components that are currently required in the Quarterly Groundwater Monitoring Reports. Therefore, a separate Quarterly Groundwater Monitoring Report is not required. In addition, the Site Conceptual Model Update must contain the results of any additional assessment and/or any remedial activities completed during the reporting period, a complete discussion on current site conditions, a complete discussion and trend analysis on analytical groundwater data, and provide a technical Work Plan for additional assessment and/or cleanup as determined by a review and evaluation of historical and current data. The Site Conceptual Model Update must also contain an annual revision of the Plume Travel Time data. Revised Plume Travel Time data must be submitted with the Site Conceptual Model Update during the April – June reporting period, which is due to the Regional Board by July 15, of each year. Additional revisions to the Plume Travel Time data may be required based on site-specific conditions.

IV. Enforcement

Pursuant to Section 13267(b) of the California Water Code, You are hereby directed to submit the periodic Updates to Site Conceptual Model Report by **October 15, 2003** and the Final Remedial Action Plan by **January 15, 2004**.

Pursuant to Section 13268 of the California Water Code, failure to submit the required technical reports, acceptable to the Executive Officer by the due dates specified above, may result in the imposition of civil liability penalties by this Regional board of up to \$1,000 per day for each day the required technical reports are delinquent from these due dates. After these dates, civil liability penalties can be assessed by the Regional Board and without further warning.

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>



Recycled Paper

Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

Mr. Moran
ARCO #5110

- 4 -

August 27, 2003

If you have any questions or need additional information, please call Ms. Heesu Park at (213) 576-6705.

Sincerely,

Original Signed by

Gregg Kwey
Senior Water Resources Control Engineer

Cc: Hari Patel, State Water Resources Control Board, UST Cleanup Fund
Nardy Drew, Los Angeles County DPW, Environmental Programs Division
Bruce Mowry, Water Replenishment District of Southern California
Gareth Roberts, SECOR

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption
For a list of simple ways to reduce demand and cut your energy costs, see the tips at: <http://www.swrcb.ca.gov/news/echallenge.html>

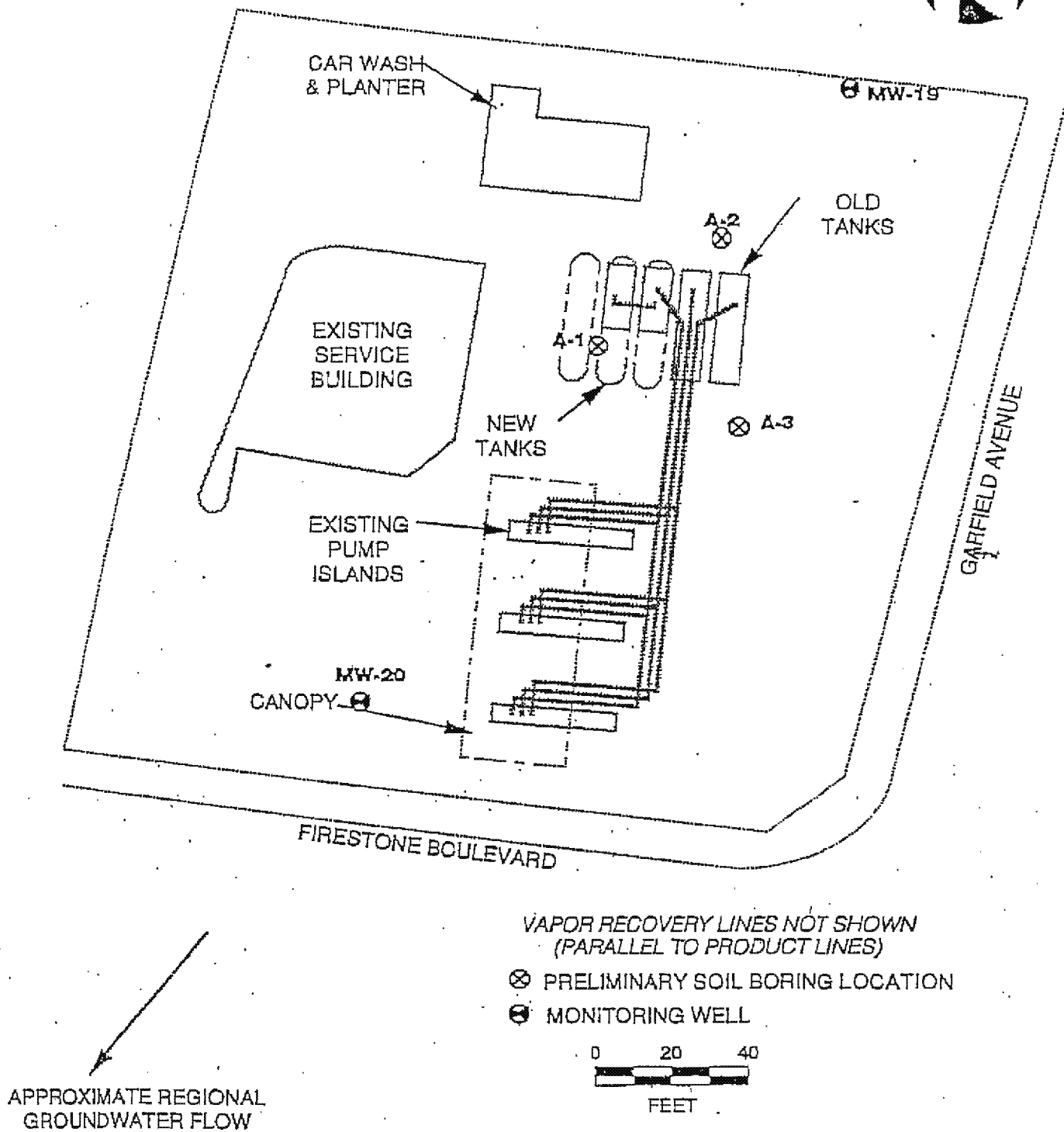


Recycled Paper

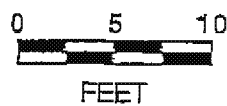
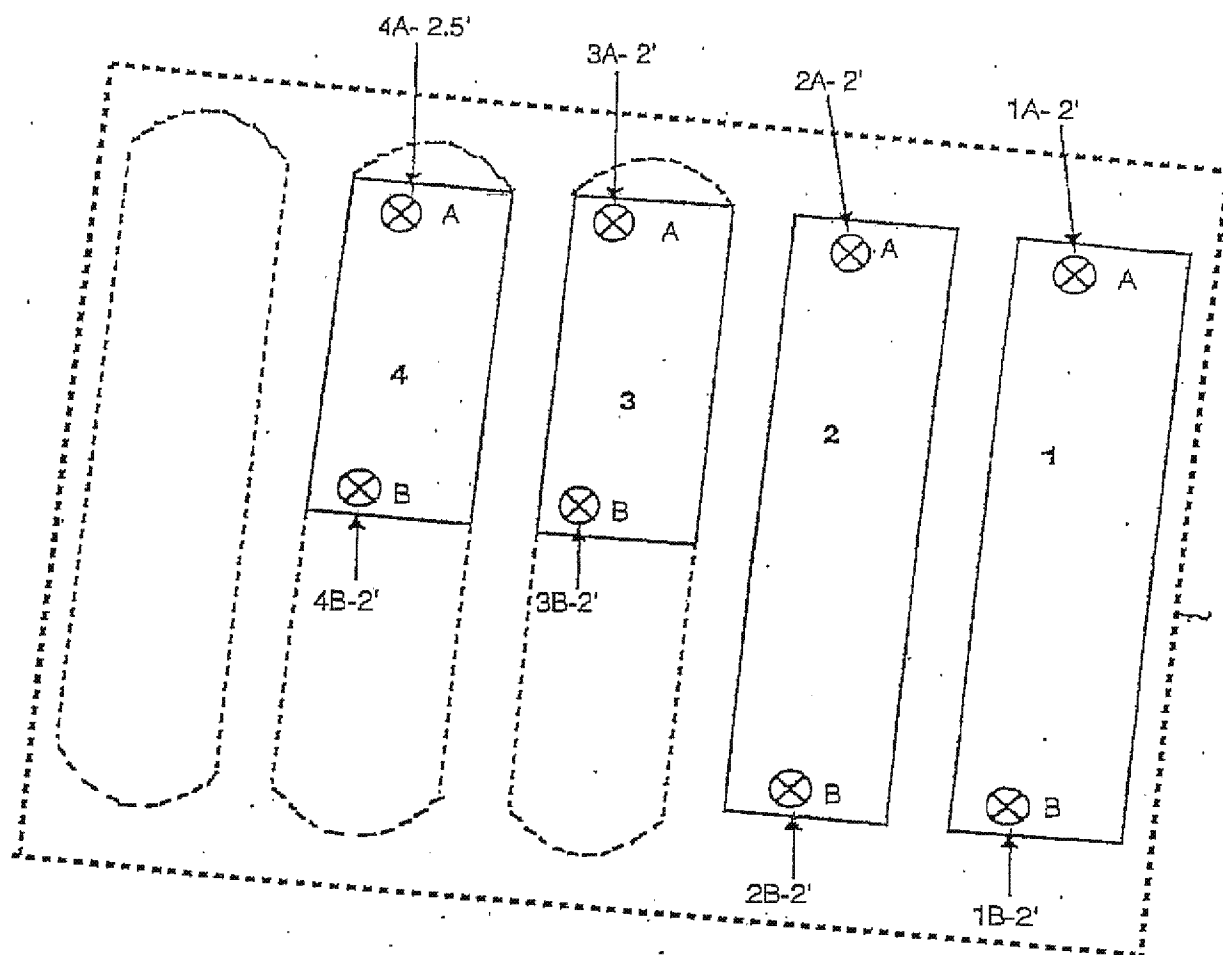
Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

APPENDIX B

Historical Figures



ARCO AM/PM #5110
Site Map and Preliminary Sample Locations
Figure 2



⊗ SAMPLE A-B

1 TANK 1

----- APPROXIMATE LOCATION OF NEW TANK

..... APPROXIMATE EXTENT OF EXCAVATION

ARCO SERVICE STATION #5110
SAMPLE LOCATIONS BENEATH REMOVED TANKS
FIGURE 3

APPENDIX C

Groundwater Sampling Field Data Sheets

Subjective and Well -Head Evaluation Form

Project No.: Q4-2004 GROUNDWATER

Location: South Gate

Date: 11/16/2004

Station No.: 5110

Field Technician: SHAUN

Day of Week: TUESDAY

DTW ORDER	WELL ID	SURFICIAL SEAL	CONCRETE SEAL	LID SECURE	GASKET	LOCK	EXPANDING CAP	TOTAL DEPTH (feet)	DEPTH TO WATER (feet)	FLOATING PRODUCT THICKNESS (feet)	DISSOLVED OXYGEN READING (mg/L)	COMMENTS
X	MW-A1	(✓)	(✓)	(✓)	(✓)	(✓)	(✓)	61.40	52.18	Ø	0.57	
X	MW-A2	(✓)	(✓)	(✓)	(✓)	(✓)	(✓)	56.63	51.43	Ø	0.51	
X	MW-A3	(✓)	(✓)	(✓)	(✓)	(✓)	(✓)	66.52	50.81	Ø	0.39	DUP
X	MW-A4	(✓)	(✓)	(✓)	(✓)	(✓)	(✓)	64.81	53.44	Ø	0.47	* waited 2 hrs well still has vacuum DTW: may be off
X	MW-A5	(✓)	(✓)	(✓)	(✓)	(✓)	(✓)	64.81	51.90	Ø	0.55	
X	MW-A6	(✓)	(✓)	(✓)	(✓)	(✓)	(✓)	63.20	51.44	Ø	0.51	
X	MW-A7	(✓)	(✓)	(✓)	(✓)	(✓)	(✓)	63.61	53.63	Ø	0.42	* waited 2 hrs well still had vacuum DTW: may be off
X	MW-19	(✓)	(✓)	(✓)	(✓)	(✓)	(✓)	69.91	51.81	Ø	0.56	
X	MW-20	(✓)	(✓)	(✓)	(✓)	(✓)	(✓)	71.84	51.94	Ø	0.39	

Note: Use G=Good and P=poor for well condition

5218

GROUNDWATER SAMPLE FIELD DATA SHEET

ATLANTIC
RICHFIELD
COMPANY

PROJECT NO: Q4-2004 Groundwater	SAMPLE ID: MW-A1
SAMPLER: Shaun Dickinson	FACILITY NO: 5110
DATE: 11/16/04	LOCATION: South Gate

CASING DIAMETER (inches) 2 3 4 6 8 12 OTHER:

DEPTH OF WELL (feet): 6140	CALCULATED PURGE (gal): 4.61
DEPTH TO WATER (feet): 52.18	ACTUAL PURGE VOL (gal): 5
Standing Water in Casing (feet) 9.22 x 0.20 = 1.844 + DTW 54.02 = 80% Recharge Water Level	

2 (inches)	Standing Water in Casing (feet)	x 0.5=	3 Casing Volumes (gal.)
4 (inches)	Standing Water in Casing (feet)	x 2.0=	3 Casing Volumes (gal.)
6 (inches)	Standing Water in Casing (feet)	x 4.4=	3 Casing Volumes (gal.)
8 (inches)	Standing Water in Casing (feet)	x 7.8=	3 Casing Volumes (gal.)

Date Purged: 11/16/04
Date Sampled: 11/16/04

Start (2400 Hr.): 2054
Time (2400 Hr.): 2120

End (2400 Hr.): 2106
DTW @ Samp. Time: 54.00

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1):

TIME (2400 Hr.)	VOLUME (gallons)	TEMP (degrees F)	E.C. (uS/cm) x1000	pH (units)	COLOR (visual)*	TURBIDITY (visual)**	TOTALIZE (gallons)
2055	1	22.53	0.91	7.00	cloudy	0.47	-148
2057	3	22.53	0.91	6.99	"	0.33	-149
2106	5	22.57	0.842	7.06	"	0.17	-172

* (Color) Clear, Cloudy, Yellow, Brown

** (Turbidity) Heavy, Moderate, Light, Trace

PURGING EQUIPMENT

2" Bladder Pump	Bailer (Teflon)	2" Bladder Pump	Bailer (Stainless Steel)
Contrifugal Pump	Bailer (PVC)	Submersible Pump	Bailer (Teflon)
Submersible Pump	Bailer (Stainless Steel)	Dipper	Bailer (Disposable Teflon)
Redi-Flo2	Dedicated	Well Wizard	Dedicated

OTHER: * VAC TRUCK OTHER:

Well Condition (cap, cement, padlock, screws, lid, etc.):

Floating Product Thickness (feet): Color: Padlock Number:

COMMENTS:

40 ml VOA, HCL: 4

1 liter amber, none:

16 oz poly, HNO3:

WATER LEVEL ONLY. NO SAMPLE COLLECTED:

REVIEWED BY: Amoreno

DATE: 11/23/04

GROUNDWATER SAMPLE FIELD DATA SHEET

ATLANTIC
RICHFIELD
COMPANY

PROJECT NO: Q4-2004 Groundwater	SAMPLE ID: MW-A2
SAMPLER: Shaun Dickinson	FACILITY NO: 5110
DATE: 11/16/04	LOCATION: South Gate

CASING DIAMETER (inches) 2 3 4 6 8 12 OTHER:

DEPTH OF WELL (feet): <u>56.63</u>	CALCULATED PURGE (gal): <u>2.6</u>
DEPTH TO WATER (feet): <u>51.43</u>	ACTUAL PURGE VOL (gal): <u>3</u>
Standing Water in Casing (feet) <u>5.20</u> x 0.20 = <u>1.04</u> + DTW <u>52.47</u> = 80% Recharge Water Level	

2 (inches)	Standing Water in Casing (feet)	x 0.5=	3 Casing Volumes (gal.)
4 (inches)	Standing Water in Casing (feet)	x 2.0=	3 Casing Volumes (gal.)
6 (inches)	Standing Water in Casing (feet)	x 4.4=	3 Casing Volumes (gal.)
8 (inches)	Standing Water in Casing (feet)	x 7.8=	3 Casing Volumes (gal.)

Date Purged: 11/16/04 Start (2400 Hr.): 2135 End (2400 Hr.): 2137
 Date Sampled: 11/16/04 Time (2400 Hr.): 2155 DTW @ Samp. Time: 5240

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1):

TIME (2400 Hr.)	VOLUME (gallons)	TEMP (degrees F)	E.C. (uS/cm) X1000	pH (units)	COLOR (visual)*	TURBIDITY (visual)**	TOTALIZE (gallons)
<u>2135</u>	<u>1</u>	<u>22.47</u>	<u>1.10</u>	<u>7.16</u>	<u>cloudy</u>	<u>0.68</u>	<u>-250</u>
<u>2136</u>	<u>2</u>	<u>22.49</u>	<u>1.11</u>	<u>7.20</u>	<u>11</u>	<u>0.50</u>	<u>-253</u>
<u>2137</u>	<u>3</u>	<u>22.53</u>	<u>1.10</u>	<u>7.21</u>	<u>11</u>	<u>0.43</u>	<u>-259</u>

* (Color) Clear, Cloudy, Yellow, Brown ** (Turbidity) Heavy, Moderate, Light, Trace

PURGING EQUIPMENT

SAMPLING EQUIPMENT

2" Bladder Pump	Bailer (Teflon)	2" Bladder Pump	Bailer (Stainless Steel)
Contrifugal Pump	Bailer (PVC)	Submersible Pump	Bailer (Teflon)
Submersible Pump	Bailer (Stainless Steel)	Dipper	Bailer (Disposable Teflon)
Redi-Flo2	Dedicated	Well Wizard	Dedicated

OTHER: VAC TRUCK OTHER:

Well Condition (cap, cement, padlock, screws, lid, etc.):

Floating Product Thickness (feet): Color: Padlock Number:

COMMENTS:

40 ml VOA, HCL: 4

1 liter amber, none:

16 ox poly, HNO3:

WATER LEVEL ONLY. NO SAMPLE COLLECTED:

REVIEWED BY: Dmoreno

DATE: 11/23/04

GROUNDWATER SAMPLE FIELD DATA SHEET

ATLANTIC
RICHFIELD
COMPANY

PROJECT NO: Q4-2004 Groundwater	SAMPLE ID: MW-A3
SAMPLER: Shaun Dickinson	FACILITY NO: 5110
DATE: 11/16/04	LOCATION: South Gate

CASING DIAMETER (inches) 2 3 4 6 8 12 OTHER:

DEPTH OF WELL (feet): <u>126.52</u>	CALCULATED PURGE (gal): <u>31.4</u>
DEPTH TO WATER (feet): <u>50.81</u>	ACTUAL PURGE VOL (gal): <u>32</u>
Standing Water in Casing (feet) <u>15.71</u> × 0.20 = <u>3.142</u> + DTW <u>53.95</u> = 80% Recharge Water Level	

2 (inches)	Standing Water in Casing (feet)	× 0.5=	3 Casing Volumes (gal.)
4 (inches)	Standing Water in Casing (feet)	× 2.0=	3 Casing Volumes (gal.)
6 (inches)	Standing Water in Casing (feet)	× 4.4=	3 Casing Volumes (gal.)
8 (inches)	Standing Water in Casing (feet)	× 7.8=	3 Casing Volumes (gal.)

Date Purged: 11/16/04 Start (2400 Hr.): 1640 End (2400 Hr.): 1722
 Date Sampled: 11/16/04 Time (2400 Hr.): 1755 DTW @ Samp. Time: 53.00

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1):

TIME (2400 Hr.)	VOLUME (gallons)	TEMP (degrees F)	E.C. (uS/cm) ×1000	pH (units)	COLOR (visual)*	TURBIDITY (visual)**	TOTALIZE (gallons)
<u>1655</u>	<u>10</u>	<u>22.97</u>	<u>1.74</u>	<u>6.96</u>	<u>clear</u>	<u>Trace</u>	<u>-2.09</u>
<u>1710</u>	<u>20</u>	<u>22.85</u>	<u>1.74</u>	<u>6.93</u>	<u>11</u>	<u>11</u>	<u>-2.13</u>
<u>1722</u>	<u>32</u>	<u>22.93</u>	<u>1.73</u>	<u>6.91</u>	<u>11</u>	<u>11</u>	<u>-2.11</u>

* (Color) Clear, Cloudy, Yellow, Brown ** (Turbidity) Heavy, Moderate, Light, Trace

PURGING EQUIPMENT

SAMPLING EQUIPMENT

2" Bladder Pump	Bailer (Teflon)	2" Bladder Pump	Bailer (Stainless Steel)
Contrifugal Pump	Bailer (PVC)	Submersible Pump	<u>Bailer (Teflon)</u>
Submersible Pump	Bailer (Stainless Steel)	Dipper	<u>Bailer (Disposable Teflon)</u>
Redi-Flo2	Dedicated	Well Wizard	Dedicated

OTHER: VAC TRUCK OTHER:

Well Condition (cap, cement, padlock, screws, lid, etc.):

Floating Product Thickness (feet): Color: Padlock Number:

COMMENTS: DO: @ 1655-0.20 @ 1710-0.17 @ 1722-0.14

40 ml VOA, HCL: 4

1 liter amber, none:

16 oz poly, HNO3:

WATER LEVEL ONLY. NO SAMPLE COLLECTED:

REVIEWED BY: Amoreno

DATE: 11/23/04

GROUNDWATER SAMPLE FIELD DATA SHEET

ATLANTIC
RICHFIELD
COMPANY

PROJECT NO: Q4-2004 Groundwater	SAMPLE ID: MW-A4
SAMPLER: Shaun Dickinson	FACILITY NO: 5110
DATE: 11/16/04	LOCATION: South Gate

CASING DIAMETER (inches) 2 3 4 6 8 12 OTHER:

DEPTH OF WELL (feet): <u>53.44 64.81</u>	CALCULATED PURGE (gal): <u>22.7</u>
DEPTH TO WATER (feet): <u>53.44</u>	ACTUAL PURGE VOL (gal): <u>23</u>
Standing Water in Casing (feet) <u>11.37</u> $\times 0.20 = 2.274$ + DTW <u>55.71</u> = 80% Recharge Water Level	

2 (inches)	Standing Water in Casing (feet)	$\times 0.5 =$	3 Casing Volumes (gal.)
4 (inches)	Standing Water in Casing (feet)	$\times 2.0 =$	3 Casing Volumes (gal.)
6 (inches)	Standing Water in Casing (feet)	$\times 4.4 =$	3 Casing Volumes (gal.)
8 (inches)	Standing Water in Casing (feet)	$\times 7.8 =$	3 Casing Volumes (gal.)

Date Purged: 11/16/04
Date Sampled: 11/16/04Start (2400 Hr.): 1846
Time (2400 Hr.): 2000End (2400 Hr.): 1934
DTW @ Samp. Time: 54.88

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1):

TIME (2400 Hr.)	VOLUME (gallons)	TEMP (degrees F)	E.C. (uS/cm) <small>$\times 1000$</small>	pH (units)	COLOR (visual)*	TURBIDITY (visual)**	TOTALIZE ORP (gallons)
<u>1905</u>	<u>8</u>	<u>21.64</u>	<u>1.93</u>	<u>6.97</u>	<u>clear</u>	<u>0.63</u>	<u>-214</u>
<u>1920</u>	<u>16</u>	<u>21.67</u>	<u>1.93</u>	<u>7.04</u>	<u>11</u>	<u>0.12</u>	<u>-227</u>
<u>0934</u>	<u>2423</u>	<u>21.70</u>	<u>1.93</u>	<u>7.05</u>	<u>11</u>	<u>0.11</u>	<u>-234</u>

* (Color) Clear, Cloudy, Yellow, Brown

** (Turbidity) Heavy, Moderate, Light, Trace

PURGING EQUIPMENT

2" Bladder Pump	Bailer (Teflon)	2" Bladder Pump	Bailer (Stainless Steel)
Contrifugal Pump	Bailer (PVC)	Submersible Pump	Bailer (Teflon)
Submersible Pump	Bailer (Stainless Steel)	Dipper	Bailer (Disposable Teflon)
Redi-Flo2	Dedicated	Well Wizard	Dedicated

OTHER: VAC TRUCK OTHER:

Well Condition (cap, cement, padlock, screws, lid, etc.):

Floating Product Thickness (feet): Color: Padlock Number:

COMMENTS:

40 ml VOA, HCL: 4

1 liter amber, none:

16 ox poly, HNO3:

WATER LEVEL ONLY. NO SAMPLE COLLECTED:

REVIEWED BY: DmorenoDATE: 11/23/04

GROUNDWATER SAMPLE FIELD DATA SHEET

ATLANTIC
RICHFIELD
COMPANY

PROJECT NO: Q4-2004 Groundwater	SAMPLE ID: MW-A5
SAMPLER: Shaun Dickinson	FACILITY NO: 5110
DATE: 11/16/04	LOCATION: South Gate

CASING DIAMETER (inches) 2 3 4 6 8 12 OTHER:

DEPTH OF WELL (feet): <u>64.81</u>	CALCULATED PURGE (gal): <u>25.8</u>
DEPTH TO WATER (feet): <u>51.90</u>	ACTUAL PURGE VOL (gal): <u>26</u>
Standing Water in Casing (feet) <u>12.91</u> $\times 0.20 = 2.582$ + DTW <u>54.48</u> = 80% Recharge Water Level	

2 (inches)	Standing Water in Casing (feet)	x 0.5=	3 Casing Volumes (gal.)
4 (inches)	Standing Water in Casing (feet)	x 2.0=	3 Casing Volumes (gal.)
6 (inches)	Standing Water in Casing (feet)	x 4.4=	3 Casing Volumes (gal.)
8 (inches)	Standing Water in Casing (feet)	x 7.8=	3 Casing Volumes (gal.)

Date Purged: 11/16/04
Date Sampled: 11/16/04

Start (2400 Hr.): 2217
Time (2400 Hr.): 2305

End (2400 Hr.): 2249
DTW @ Samp. Time: 57.57

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1):

TIME (2400 Hr.)	VOLUME (gallons)	TEMP (degrees F)	E.C. (uS/cm) <small>$\times 1000$</small>	pH (units)	COLOR (visual)*	TURBIDITY (visual)**	TOTALIZE (gallons)
<u>2230</u>	<u>9</u>	<u>23.09</u>	<u>1.78</u>	<u>7.09</u>	<u>clear</u>	<u>0.14</u>	<u>-250</u>
<u>2239</u>	<u>18</u>	<u>23.07</u>	<u>1.83</u>	<u>7.11</u>	<u>11</u>	<u>0.13</u>	<u>-260</u>
<u>2249</u>	<u>26</u>	<u>23.06</u>	<u>1.83</u>	<u>7.11</u>	<u>11</u>	<u>0.11</u>	<u>-262</u>

* (Color) Clear, Cloudy, Yellow, Brown

** (Turbidity) Heavy, Moderate, Light, Trace

PURGING EQUIPMENT

SAMPLING EQUIPMENT

2" Bladder Pump	Bailer (Teflon)	2" Bladder Pump	Bailer (Stainless Steel)
Contrifugal Pump	Bailer (PVC)	Submersible Pump	Bailer (Teflon)
Submersible Pump	Bailer (Stainless Steel)	Dipper	<u>Bailer (Disposable Teflon)</u>
Redi-Flo2	Dedicated	Well Wizard	Dedicated

OTHER: VAC TRUCK OTHER:

Well Condition (cap, cement, padlock, screws, lid, etc.):

Floating Product Thickness (feet): Color: Padlock Number:

COMMENTS:

055

40 ml VOA, HCL: 4

1 liter amber, none:

16 ox poly, HNO3:

WATER LEVEL ONLY. NO SAMPLE COLLECTED:

REVIEWED BY: Danorend

DATE: 11/23/04

GROUNDWATER SAMPLE FIELD DATA SHEET

ATLANTIC
RICHFIELD
COMPANY

PROJECT NO: Q4-2004 Groundwater	SAMPLE ID: MW-A6
SAMPLER: Shaun Dickinson	FACILITY NO: 5110
DATE: 11/16/04	LOCATION: South Gate

CASING DIAMETER (inches) 2 3 4 6 8 12 OTHER:

DEPTH OF WELL (feet): <u>103.70</u>	CALCULATED PURGE (gal): <u>23.5</u>
DEPTH TO WATER (feet): <u>51.44</u>	ACTUAL PURGE VOL (gal): <u>24</u>
Standing Water in Casing (feet) <u>11.76</u> x 0.20 = <u>2.352</u> + DTW <u>53.79</u> = 80% Recharge Water Level	

2 (inches)	Standing Water in Casing (feet)	x 0.5=	3 Casing Volumes (gal.)
4 (inches)	Standing Water in Casing (feet)	x 2.0=	3 Casing Volumes (gal.)
6 (inches)	Standing Water in Casing (feet)	x 4.4=	3 Casing Volumes (gal.)
8 (inches)	Standing Water in Casing (feet)	x 7.8=	3 Casing Volumes (gal.)

Date Purged: 11/16/04 Start (2400 Hr.): 2314 End (2400 Hr.): 2341
 Date Sampled: 11/16/04 Time (2400 Hr.): 2355 DTW @ Samp. Time: 53.79

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1):

TIME (2400 Hr.)	VOLUME (gallons)	TEMP (degrees F)	E.C. (uS/cm) <small>x1000</small>	pH (units)	COLOR (visual)*	TURBIDITY (visual)**	TOTALIZE (gallons)
<u>2327</u>	<u>8</u>	<u>21.18</u>	<u>1.64</u>	<u>7.08</u>	<u>clear</u>	<u>0.13</u>	<u>-17.8</u>
<u>2333</u>	<u>16</u>	<u>21.20</u>	<u>1.64</u>	<u>7.10</u>	<u>11</u>	<u>0.12</u>	<u>-18.4</u>
<u>2341</u>	<u>24</u>	<u>21.21</u>	<u>1.64</u>	<u>7.10</u>	<u>a</u>	<u>0.13</u>	<u>-19.2</u>

* (Color) Clear, Cloudy, Yellow, Brown ** (Turbidity) Heavy, Moderate, Light, Trace

PURGING EQUIPMENT

SAMPLING EQUIPMENT

2" Bladder Pump	Bailer (Teflon)	2" Bladder Pump	Bailer (Stainless Steel)
Contrifugal Pump	Bailer (PVC)	Submersible Pump	Bailer (Teflon)
Submersible Pump	Bailer (Stainless Steel)	Dipper	Bailer (Disposable Teflon)
Redi-Flo2	Dedicated	Well Wizard	Dedicated

OTHER: VAC TRUCK OTHER:

Well Condition (cap, cement, padlock, screws, lid, etc.):

Floating Product Thickness (feet): Color: Padlock Number:

COMMENTS:

40 ml VOA, HCL: 4

1 liter amber, none:

16 oz poly, HNO3:

WATER LEVEL ONLY. NO SAMPLE COLLECTED:

REVIEWED BY:

DATE:

Amoreno

11/23/04

GROUNDWATER SAMPLE FIELD DATA SHEET

ATLANTIC
RICHFIELD
COMPANY

PROJECT NO: Q4-2004 Groundwater	SAMPLE ID: MW-A7
SAMPLER: Shaun Dickinson	FACILITY NO: 5110
DATE: 11/16/04	LOCATION: South Gate

CASING DIAMETER (inches) 2 3 4 6 8 12 OTHER:

DEPTH OF WELL (feet): 106.52 63.61	CALCULATED PURGE (gal): 19.9
DEPTH TO WATER (feet): 53.63	ACTUAL PURGE VOL (gal): 20
Standing Water in Casing (feet) 9.58 x 0.20 = 1.916 + DTW 55.62 = 80% Recharge Water Level	

2 (inches)	Standing Water in Casing (feet)	x 0.5=	3 Casing Volumes (gal.)
4 (inches)	Standing Water in Casing (feet)	x 2.0=	3 Casing Volumes (gal.)
6 (inches)	Standing Water in Casing (feet)	x 4.4=	3 Casing Volumes (gal.)
8 (inches)	Standing Water in Casing (feet)	x 7.8=	3 Casing Volumes (gal.)

Date Purged: 11/16/04
Date Sampled: 11/16/04

Start (2400 Hr.): 1953
Time (2400 Hr.): 2040

End (2400 Hr.): 2020
DTW @ Samp. Time: 54.91

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1):

TIME (2400 Hr.)	VOLUME (gallons)	TEMP (degrees F)	E.C. (uS/cm) X1000	pH (units)	COLOR (visual)*	TURBIDITY (visual)**	TOTALIZE (gallons)
2004	7	22.42	2.13	6.97	clear	0.13	-232
2013	14	22.42	2.13	7.01	11	0.13	-245
2020	21	22.42	2.13	7.02	11	0.12	-249

* (Color) Clear, Cloudy, Yellow, Brown

** (Turbidity) Heavy, Moderate, Light, Trace

PURGING EQUIPMENT

2" Bladder Pump	Bailer (Teflon)	2" Bladder Pump	Bailer (Stainless Steel)
Contrifugal Pump	Bailer (PVC)	Submersible Pump	Bailer (Teflon)
Submersible Pump	Bailer (Stainless Steel)	Dipper	Bailer (Disposable Teflon)
Redi-Flo2	Dedicated	Well Wizard	Dedicated

SAMPLING EQUIPMENT

OTHER: VAC TRUCK OTHER:

Well Condition (cap, cement, padlock, screws, lid, etc.):

Floating Product Thickness (feet): Color: Padlock Number:

COMMENTS:

40 ml VOA, HCL: 4

1 liter amber, none:

16 oz poly, HNO3:

WATER LEVEL ONLY. NO SAMPLE COLLECTED:

REVIEWED BY: moreno

DATE: 11/23/04

GROUNDWATER SAMPLE FIELD DATA SHEET

ATLANTIC
RICHFIELD
COMPANY

PROJECT NO: Q4-2004 Groundwater	SAMPLE ID: MW-19
SAMPLER: Shaun Dickinson	FACILITY NO: 5110
DATE: 11/16/04	LOCATION: South Gate

CASING DIAMETER (inches) 2 3 4 6 8 12 OTHER:

DEPTH OF WELL (feet): <u>69.91</u>	CALCULATED PURGE (gal): <u>36.2</u>
DEPTH TO WATER (feet): <u>51.81</u>	ACTUAL PURGE VOL (gal): <u>37</u>
Standing Water in Casing (feet) <u>18.10</u> × 0.20 = <u>3.62</u> + DTW <u>55.43</u> = 80% Recharge Water Level	

2 (inches)	Standing Water in Casing (feet)	× 0.5=	3 Casing Volumes (gal.)
4 (inches)	Standing Water in Casing (feet)	× 2.0=	3 Casing Volumes (gal.)
6 (inches)	Standing Water in Casing (feet)	× 4.4=	3 Casing Volumes (gal.)
8 (inches)	Standing Water in Casing (feet)	× 7.8=	3 Casing Volumes (gal.)

Date Purged: 11/16/04
Date Sampled: 11/16/04
11/17/04

Start (2400 Hr.): 0003
Time (2400 Hr.): 0120

End (2400 Hr.): 0103
DTW @ Samp. Time: 54.15

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1):

TIME (2400 Hr.)	VOLUME (gallons)	TEMP (degrees F)	E.C. (uS/cm) <small>×1000</small>	pH (units)	COLOR (visual)*	TURBIDITY (visual)**	TOTALIZE (gallons)
<u>0017</u>	<u>17</u>	<u>21.94</u>	<u>1.29</u>	<u>6.98</u>	<u>Clear</u>	<u>0.30</u>	<u>-195</u>
<u>0045</u>	<u>24</u>	<u>22.05</u>	<u>1.85</u>	<u>7.00</u>	<u>1</u>	<u>0.35</u>	<u>-198</u>
<u>0103</u>	<u>37</u>	<u>22.10</u>	<u>1.84</u>	<u>6.99</u>	<u>1</u>	<u>0.32</u>	<u>-192</u>

* (Color) Clear, Cloudy, Yellow, Brown

** (Turbidity) Heavy, Moderate, Light, Trace

PURGING EQUIPMENT

SAMPLING EQUIPMENT

2" Bladder Pump	Bailer (Teflon)	2" Bladder Pump	Bailer (Stainless Steel)
Contrifugal Pump	Bailer (PVC)	Submersible Pump	Bailer (Teflon)
Submersible Pump	Bailer (Stainless Steel)	Dipper	Bailer (Disposable Teflon)
Redi-Flo2	Dedicated	Well Wizard	Dedicated

OTHER: VAC TRUCK OTHER:

Well Condition (cap, cement, padlock, screws, lid, etc.):

Floating Product Thickness (feet): Color: Padlock Number:

COMMENTS:

40 ml VOA, HCL: 4

1 liter amber, none:

16 oz poly, HNO3:

WATER LEVEL ONLY. NO SAMPLE COLLECTED:

REVIEWED BY: Imoreno

DATE: 11/23/04

GROUNDWATER SAMPLE FIELD DATA SHEET

ATLANTIC
RICHFIELD
COMPANY

PROJECT NO: Q4-2004 Groundwater	SAMPLE ID: MW-20
SAMPLER: Shaun Dickinson	FACILITY NO: 5110
DATE: 11/16/04	LOCATION: South Gate

CASING DIAMETER (inches) 2 3 4 6 8 12 OTHER:

DEPTH OF WELL (feet): <u>71.84</u>	CALCULATED PURGE (gal): <u>39.8</u>
DEPTH TO WATER (feet): <u>51.94</u>	ACTUAL PURGE VOL (gal): <u>40</u>
Standing Water in Casing (feet) <u>19.9</u> x 0.20 = <u>3.98</u> + DTW <u>55.92</u> = 80% Recharge Water Level	

2 (inches)	Standing Water in Casing (feet)	x 0.5=	3 Casing Volumes (gal.)
4 (inches)	Standing Water in Casing (feet)	x 2.0=	3 Casing Volumes (gal.)
6 (inches)	Standing Water in Casing (feet)	x 4.4=	3 Casing Volumes (gal.)
8 (inches)	Standing Water in Casing (feet)	x 7.8=	3 Casing Volumes (gal.)

Date Purged: 11/16/04 Start (2400 Hr.): 1745 End (2400 Hr.): 1822
 Date Sampled: 11/16/04 Time (2400 Hr.): 1850 DTW @ Samp. Time: 55.12

FIELD QC SAMPLES COLLECTED AT THIS WELL (IE: FB-1, X-DUP-1): FB-5110-20041116 @ 1830

TIME (2400 Hr.)	VOLUME (gallons)	TEMP (degrees F)	E.C. (uS/cm) X1000	pH (units)	COLOR (visual)*	TURBIDITY (visual)**	TOTALIZE (gallons)
<u>1800</u>	<u>15</u>	<u>22.58</u>	<u>1.78</u>	<u>7.00</u>	<u>clear</u>	<u>0.18</u>	<u>-208</u>
<u>1804</u>	<u>20</u>	<u>22.61</u>	<u>1.79</u>	<u>7.00</u>	<u>11</u>	<u>0.18</u>	<u>-207</u>
<u>1808</u>	<u>25</u>	<u>22.58</u>	<u>1.82</u>	<u>7.05</u>	<u>11</u>	<u>0.35</u>	<u>-189</u>
<u>1810</u>	<u>30</u>	<u>22.63</u>	<u>1.83</u>	<u>7.05</u>	<u>11</u>	<u>0.39</u>	<u>-183</u>
<u>1816</u>	<u>35</u>	<u>22.66</u>	<u>1.81</u>	<u>7.05</u>	<u>11</u>	<u>0.25</u>	<u>-185</u>
<u>1822</u>	<u>40</u>	<u>22.69</u>	<u>1.81</u>	<u>7.05</u>	<u>11</u>	<u>0.18</u>	<u>-188</u>

* (Color) Clear, Cloudy, Yellow, Brown ** (Turbidity) Heavy, Moderate, Light, Trace

PURGING EQUIPMENT

SAMPLING EQUIPMENT

2" Bladder Pump	Bailer (Teflon)	2" Bladder Pump	Bailer (Stainless Steel)
Centrifugal Pump	Bailer (PVC)	Submersible Pump	Bailer (Teflon)
Submersible Pump	Bailer (Stainless Steel)	Dipper	Bailer (Disposable Teflon)
Redi-Flo2	Dedicated	Well Wizard	Dedicated

OTHER: (VAC TRUCK) OTHER:

Well Condition (cap, cement, padlock, screws, lid, etc.):

Floating Product Thickness (feet): Color: Padlock Number:

COMMENTS: None

40 ml VOA, HCL: N

1 liter amber, none:

16 oz poly, HNO3:

WATER LEVEL ONLY. NO SAMPLE COLLECTED:

REVIEWED BY: Imoreno

DATE: 11/23/04

SECOR International, Incorporated

Air Sparging/Vapor Extraction Monitoring Log

SITE INFORMATION

CLIENT/SITE	Atlantic Richfield Company Station No. 5110		Unit:	Paragon Environmental Systems ET-250	
ADDRESS	5731 East Firstone Boulevard, South Gate, California		Permit No.:	SCAQMD Permit-to-Operate No. F81746	
TECHNICIAN	Initials: <u>WAS WAMP</u>	Date:	<u>10-7-04</u>	Weekday:	<u>THURS</u>
ARRIVAL STATUS:	<u>ON/OFF</u>	OPERATING HOURS:	<u>03719.2</u>	Alarms:	<u>0</u>
UTILITIES	Gas Meter	<u>20159</u>	cfm / therm	Electrical Meter	<u>23583</u> KWh

BLOWER/SKID

Temperature	Process:	<u>1511</u>	"F	Post Cal:	<u>1511</u>	"F
Process Flow	<u>159</u>	scfm	Change Chart Paper?	<u>Yes/No</u>	Manifold Vacuum:	<u>50</u> "H ₂ O
Source Well Flow (Pilot Tube)	P:	<u>159</u>	In H ₂ O ΔP:	<u>159</u>	Source Flow:	<u>159</u> scfm
Effluent Flow (Pilot Tube)	P:	<u>159</u>	In H ₂ O ΔP:	<u>159</u>	Effluent Flow:	<u>159</u> scfm
Blower	Amps:	<u>28.1</u>	A	Lubricate?	<u>Yes/No</u>	Change Oil?
Dilution Valve	Auto:	<u>0</u>	%open	Manual:	<u>0</u>	%open
LEL Reading	Set:	<u>0</u>	%	RV:	<u>0</u>	%
VES Concentrations	Influent (Diluted)	<u>2216</u>	ppm	Influent (Undiluted)	<u>11.8</u>	ppm
Monitoring Device	<u>MTNT RAE 2000</u>		Calibration (type/date) <u>100 PPM XX / 10-7-04</u>			

VAPOR EXTRACTION WELLS

WELL NO	Well Interval	Status O/C	Vacuum (in wc)	Conc. (ppmv)	ΔP (in wc)	Temp (Deg. F)	Flow (scfm)	DTW (ft)	Well Screen (ft)
SVE-1	Shallow	<u>0</u>	<u>50</u>	<u>121</u>					8 to 28
	Deep	<u>100</u>	<u>50</u>	<u>121</u>					35 to 55
SVE-2	Shallow	<u>0</u>	<u>50</u>	<u>1822</u>					7 to 27
	Deep	<u>100</u>	<u>50</u>	<u>1822</u>					35 to 55
SVE-3	Shallow	<u>0</u>	<u>50</u>	<u>2832</u>					8 to 28
	Deep	<u>100</u>	<u>50</u>	<u>2832</u>					35 to 55
SVE-4	Shallow	<u>0</u>	<u>50</u>	<u>1773</u>					7 to 27
	Deep	<u>100</u>	<u>50</u>	<u>1773</u>					35 to 55
SVE-5	Shallow	<u>0</u>	<u>50</u>	<u>736</u>					8 to 28
	Deep	<u>100</u>	<u>50</u>	<u>736</u>					34 to 56
IMW-A7	Shallow	<u>100</u>	<u>50</u>	<u>1372</u>					10 to 30
	Deep	<u>100</u>	<u>50</u>	<u>1372</u>					35 to 65
VEW-2	Shallow	NOT CONNECTED TO SYSTEM							4 to 7
	Mid	NOT CONNECTED TO SYSTEM							12 to 29
	Deep	NOT CONNECTED TO SYSTEM							34 to 54
D-3		NOT CONNECTED TO SYSTEM							7 to 47

AIR COMPRESSOR MAINTENANCE

Air Compressor:	<u>ON/OFF</u>	Tank Pressure (psi)	<u>0</u>	On-Line	<u>0</u>	Off-Line	<u>0</u>	Changed Air Filter?	<u>Yes/No</u>	Changed Oil?	<u>Yes/No</u>
-----------------	---------------	---------------------	----------	---------	----------	----------	----------	---------------------	---------------	--------------	---------------

AIR SPARGING SYSTEM MONITORING

POINT NUMBER	Flow (scfm)	Pressure (psi)	Cycle On	Cycle Off	Cycle On	Cycle Off	COMPLIANCE	
1	AS-1		12:00 AM	2:20 AM	12:00 PM	2:20 PM	DO NOT OPERATE VES UNLESS CONDITIONS ARE SATISFIED	
2	AS-2		2:20 AM	4:40 AM	14:20 PM	14:40 PM	Current Permit Posted?	<u>Yes/No</u>
3	AS-3		4:40 AM	7:00 AM	16:40 PM	17:00 PM	VES Flow Rate <300 SCFM?	<u>Yes/No</u>
4	AS-4		7:00 AM	9:20 AM	19:00 PM	19:20 PM	Temperature >1,500 °F?	<u>Yes/No</u>
5	AS-5		9:20 AM	11:40 AM	21:20 PM	21:40 PM	Effluent VOC <50 ppmv (as Hex)?	<u>Yes/No</u>
							Copies of Logs On-Site?	<u>Yes/No</u>

MONTHLY CERTIFIED VAPOR SAMPLING

NOTE: Influent and Effluent Samples must be collected within 10 minutes of one another.				REQUIRED ANALYSIS AND SAMPLING CONTAINERS			EFFLUENT LIMITATIONS	
	Collect Sample	Sample Collected?	Sample Date	Sample Time	TPHg	BTEX & Standard Oxygenates	Benzene	VOCs = 50 ppmv
Influent	Monthly	YES/NO	<u>10-7-04</u>	<u>1510</u>	1 Tedlar Bag	EPA 8260B	EPA 410A	
Effluent	Monthly	YES/NO	<u>10-7-04</u>	<u>1505</u>	1 Tedlar Bag		1 Tedlar Bag	Benzene = 0.24 ppmv
STATUS DEPARTURE				<u>ON/OFF</u>	Drums:	<u>0</u>	empty	full

Notes: List all activities, observations, recommendations

SYSTEM WAS ON UPON ARRIVAL DID O&M COLLECTED ALL DATA AND TOOK MONTHLY SAMPLES - SYSTEM WAS ON UPON DEPARTURE

SECOR International, Incorporated

Air Sparging/Vapor Extraction Monitoring Log

SITE INFORMATION

CLIENT/SITE	Atlantic Richfield Company Station No. 5110		Unit:	Paragon Environmental Systems ET-250	
ADDRESS	5731 East Firestone Boulevard, South Gate, California		Permit No.:	SCAQMD Permit-to-Operate No. F61746	
TECHNICIAN	Initials: BUS WAMAS	Date:	10-14-04	Weekday:	THURS
ARRIVAL STATUS	ON/OFF	OPERATING HOURS:	03881.9	Alarms:	0
UTILITIES	Gas Meter	20923	cfm / therm	Electrical Meter	24715 KWh

BLOWER SKID

Temperature	Process:	1512	°F	Post Cat.:	1515	°F
Process Flow	169	scfm	Change Chart Paper?	Yes/No	Manifold Vacuum:	5.3
Source Well Flow (Ritot Tube)	169	scfm	Temp:		Effluent Flow:	169
Effluent Flow (Ritot Tube)		scfm	Temp:		Change Oil?	Yes/No
Blower	Amps:	28.1	A	Lubricate?	Yes/No	Belts OK?
Dilution Valve	Auto:	0	%open	Manual:	0	%open
LEL Reading	Set		%			%
VES Concentrations	Influent (Diluted)		ppm	Influent (Undiluted)	1679	ppm
Monitoring Device	VENT RAE 2000			Calibration (type/date)	1000 PPM HCV/10-14-07	

VAPOR EXTRACTION WELLS

Pid reading: express as Hexane

WELL NO.	Well Interval	Status O/C	Vacuum (inwc)	Conc. (ppmv)	ΔP (inwc)	Temp (Deg. F)	Flow (scfm)	DTW (ft)	Well Screen (ft)
SVE-1	Shallow	0							8 to 28
	Deep	100	53	1798					35 to 55
SVE-2	Shallow	0							7 to 27
	Deep	100	53	1621					35 to 55
SVE-3	Shallow	0							8 to 28
	Deep	100	53	2049					35 to 55
SVE-4	Shallow	0							7 to 27
	Deep	100	53	944					35 to 55
SVE-5	Shallow	0							6 to 28
	Deep	100	53	183					34 to 56
MW-A7	Shallow	100	53	841					10 to 30
	Deep								35 to 65
VEW-2	Shallow	NOT CONNECTED TO SYSTEM							4 to 7
	Mid	NOT CONNECTED TO SYSTEM							12 to 29
	Deep	NOT CONNECTED TO SYSTEM							34 to 54
D-3		NOT CONNECTED TO SYSTEM							7 to 47

AIR COMPRESSOR MAINTENANCE

Air Compressor	ON/OFF	Tank Pressure (psi)	On-Line	Off-Line	Changed Air Filter?	Yes/No	Changed Oil?	Yes/No
----------------	--------	---------------------	---------	----------	---------------------	--------	--------------	--------

AIR SPARGING SYSTEM MONITORING

COMPLIANCE

POINT NUMBER	Flow (scfm)	Pressure (psi)	Cycle On	Cycle Off	Cycle On	Cycle Off	DO NOT OPERATE VES UNLESS CONDITIONS ARE SATISFIED	
1	AS-1		12:00 AM	2:20 AM	12:00 PM	2:20 PM	Current Permit Posted?	Yes/No
2	AS-2		2:20 AM	4:40 AM	14:20 PM	4:40 PM	VES Flow Rate < 900 SCFM?	Yes/No
3	AS-3		4:40 AM	7:00 AM	16:40 PM	7:00 PM	Temperature > 1,500 °F?	Yes/No
4	AS-4		7:00 AM	9:20 AM	19:00 PM	9:20 PM	Effluent VOC < 50 ppmv (as Hex)?	Yes/No
5	AS-5		9:20 AM	11:40 AM	9:20 PM	11:40 PM	Copies of Logs On-Site?	Yes/No

MONTHLY CERTIFIED VAPOR SAMPLING

NOTE: Influent and Effluent Samples must be collected within 15 minutes of one another	Collect Sample	Sample Collected?	Sample Date	Sample Time	REQUIRED ANALYSIS AND SAMPLING CONTAINERS			EFFLUENT LIMITATIONS
					TPHg EPA 8015 Mcc.	BTEX & Standard Oxygenates EPA 8260B	Benzene EPA 410A	
Influent	Monthly	YES/NO			1 Tedlar Bag			VOCs = 50 ppmv
Effluent	Monthly	YES/NO			1 Tedlar Bag		1 Tedlar Bag	Benzene = 0.24 ppmv
STATUS/DEPARTURE:					ON/OFF	Drums:	empty	full

Notes: List all activities, observations, recommendations

SYSTEM WAS ON UPON ARRIVAL, DID NOT AND COLLECTED ALL DATA.

SYSTEM WAS ON UPON DEPARTURE.

All O&M activities must be conducted every seven days or sooner unless otherwise indicated by a "(Monthly)" note.

SECOR International, Incorporated

Air Sparging/Vapor Extraction Monitoring Log

SITE INFORMATION

CLIENT/SITE	Atlantic Richfield Company Station No. 5110		Unit:	Paragon Environmental Systems ET-250	
ADDRESS	5731 East Firestone Boulevard, South Gate, California		Permit No.:	SCAQMD Permit-to-Operate No. F61746	
TECHNICIAN	Initials: <u>G. S. W. A. N. A. S.</u>	Date:	<u>10-21-04</u>	Weekday:	<u>THURS</u>
ARRIVAL STATUS:	<u>ON/OFF</u>	OPERATING HOURS	<u>04019.1</u>	Alarms:	<u>FSC FAULT</u>
UTILITIES	Gas Meter	<u>21586</u>	cfm / therm	Electrical Meter	<u>25662</u> KWh

BLOWER SKID

Temperature	Process:	<u>1505</u> °F	Post Cat.:	<u>1507</u> °F
Process Flow	<u>176</u> scfm	Change Chart Paper?	<u>Yes/No</u>	Manifold Vacuum:
Source Well Flow (Pilot Tube)	P:	In H ₂ O	ΔP:	In H ₂ O
Effluent Flow (Pilot Tube)	P:	In H ₂ O	ΔP:	In H ₂ O
Blower	Amps:	<u>26.1</u>	A Lubricate?	Yes/No
Dilution Valve	Auto:	<u>Open</u>	Manual:	<u>Open</u>
LEL Reading	Set:	<u>25</u> %		
YES Concentrations	Influent (Diluted)	<u>2249</u> ppm	Influent (Undiluted)	<u>1.3</u> ppm
Monitoring Device	<u>MENT RAE 2000</u>		Calibration (type/date)	<u>100 PPM HEX / 10-21-04</u>

VAPOR EXTRACTION WELLS

WELL NO.	Well Interval	Status O/C	Vacuum ("wc)	Conc. (ppmv)	ΔP ("wc)	Temp (Deg. F)	Flow (scfm)	DTW (ft)	Well Screen (ft)
SVE-1	Shallow	<u>0</u>							8 to 28
	Deep	<u>100</u>	<u>47</u>	<u>495</u>					35 to 55
SVE-2	Shallow	<u>0</u>							7 to 27
	Deep	<u>100</u>	<u>47</u>	<u>3525</u>					35 to 55
SVE-3	Shallow	<u>0</u>							8 to 28
	Deep	<u>100</u>	<u>47</u>	<u>3189</u>					35 to 55
SVE-4	Shallow	<u>0</u>							7 to 27
	Deep	<u>100</u>	<u>47</u>	<u>829</u>					35 to 55
SVE-5	Shallow	<u>0</u>							8 to 28
	Deep	<u>100</u>	<u>47</u>	<u>244</u>					34 to 56
MW-A7	Shallow	<u>100</u>	<u>47</u>	<u>1284</u>					10 to 30
	Deep								35 to 65
VEW-2	Shallow								4 to 7
	Mid								12 to 29
	Deep								34 to 54
D-3									7 to 47

AIR COMPRESSOR MAINTENANCE

Air Compressor	<u>ON/OFF</u>	Tank Pressure (psi)	On-Line	Off-Line	Changed Air Filter?	Yes/No	Changed Oil?	Yes/No
----------------	---------------	---------------------	---------	----------	---------------------	--------	--------------	--------

AIR SPARGING SYSTEM MONITORING

POINT NUMBER	Flow (scfm)	Pressure (psi)	Cycle On	Cycle Off	Cycle On	Cycle Off	DO NOT OPERATE VES UNLESS CONDITIONS ARE SATISFIED
1 AS-1			12:00 AM	2:20 AM	2:00 PM	2:20 PM	Current Permit Posted? <u>Yes/No</u>
2 AS-2			2:20 AM	4:40 AM	14:20 PM	4:40 PM	VES Flow Rate <300 SCFM? <u>Yes/No</u>
3 AS-3			4:40 AM	7:00 AM	16:40 PM	7:00 PM	Temperature >1,500 °F? <u>Yes/No</u>
4 AS-4			7:00 AM	9:20 AM	19:00 PM	9:20 PM	Effluent VOC <50 ppmv (as Hex)? <u>Yes/No</u>
5 AS-5			9:20 AM	11:40 AM	21:20 PM	11:40 PM	Copies of Logs On Site? <u>Yes/No</u>

MONTHLY CERTIFIED VAPOR SAMPLING

NOTE: Influent and Effluent Samples must be collected within 15 minutes of one another	Collect Sample	Sample Collected?	Sample Date	Sample Time	REQUIRED ANALYSIS AND SAMPLING CONTAINERS			EFFLUENT LIMITATIONS
					TPHg EPA 8015 Mod.	BTEX & Standard Oxygenates EPA 8260B	Benzene EPA 410A	
Influent	Monthly	YES/NO			1 Tedlar Bag			VOCs = 50 ppmv
Effluent	Monthly	YES/NO			1 Tedlar Bag		1 Tedlar Bag	Benzene = 0.24 ppmv
STATUS DEPARTURE:					Drums:		empty	full

Notes: List all activities, observations, recommendations

SYSTEM WAS OFF UPON ARRIVAL. RESTARTED THE SYSTEM DID O&M AND COLLECTED ALL DATA. SYSTEM WAS ON UPON DEPARTURE

All O&M activities must be conducted every seven days or sooner unless otherwise indicated by a "(Monthly)" note.

SECOR International, Incorporated
Air Sparging/Vapor Extraction Monitoring Log

SITE INFORMATION

CLIENT/SITE	Atlantic Richfield Company Station No. 5110		Unit:	Paragon Environmental Systems ET-250	
ADDRESS	5731 East Firestone Boulevard, South Gate, California		Permit No.:	SCAQMD Permit to Operate No. F61746	
TECHNICIAN	Initials: R NEWBERN	Date:	10/28/04	Weekday:	THURS
ARRIVAL STATUS:	<input checked="" type="checkbox"/> ON/OFF	OPERATING HOURS:	4787.0	Alarms:	NONE
UTILITIES	Gas Meter:	22431 cfm / therm	Electrical Meter:	26814 kWh	

BLOWER SKID

Temperature	Process:	1513 °F	Post Cal:	1513 °F
Process Flow	172 scfm	Change Chart Paper?	<input checked="" type="checkbox"/> Yes/No	Manifold Vacuum:
Source Well Flow (Pilot Tube)	P: In H ₂ O AP: In H ₂ O Temp: °F	Source Flow:	172 scfm	
Effluent Flow (Pilot Tube)	P: In H ₂ O AP: In H ₂ O Temp: °F	Effluent Flow:		
Blower	Amps:	26.0 A	Lubricate?	<input checked="" type="checkbox"/> Yes/No
Dilution Valve	Auto:	<input type="checkbox"/> %open	Manual:	<input checked="" type="checkbox"/> %open
LEL Reading	Set:			
VES Concentrations	Influent (Diluted)	— ppm	Influent (Undiluted)	24.6 ppm
			Effluent	20.7 ppm
Monitoring Device	MINIRAE 2000 PID		Calibration (type/date)	HEXANE 100 ppm / 10/28/02

VAPOR EXTRACTION WELLS

Pid reading expressed as Hexane

WELL NO.	Well Interval	Status O/C	Vacuum ("wc)	Conc. (ppmv)	ΔP ("wc)	Temp (Deg. F)	Flow (scfm)	DTW (ft)	Well Screen (ft)
SVE-1	Shallow	<input checked="" type="checkbox"/>	—	—	—	—	—	—	8 to 28
	Deep	100	60	71.6	—	—	—	—	35 to 55
SVE-2	Shallow	<input checked="" type="checkbox"/>	—	—	—	—	—	—	7 to 27
	Deep	100	100	3587	—	—	—	—	35 to 55
SVE-3	Shallow	<input checked="" type="checkbox"/>	—	—	—	—	—	—	8 to 28
	Deep	100	60	16.5	—	—	—	—	35 to 55
SVE-4	Shallow	<input checked="" type="checkbox"/>	—	—	—	—	—	—	7 to 27
	Deep	100	60	9.9	—	—	—	—	35 to 55
SVE-5	Shallow	<input checked="" type="checkbox"/>	—	—	—	—	—	—	6 to 28
	Deep	100	60	4.2	—	—	—	—	34 to 56
MW-A7	Shallow	100	60	88.2	—	—	—	—	10 to 30
	Deep	—	—	—	—	—	—	—	35 to 65
VEW-2	Shallow	NOT CONNECTED TO SYSTEM							4 to 7
	Mid	NOT CONNECTED TO SYSTEM							12 to 29
	Deep	NOT CONNECTED TO SYSTEM							34 to 54
D-3		NOT CONNECTED TO SYSTEM							7 to 47

AIR COMPRESSOR MAINTENANCE

Air Compressor	<input checked="" type="checkbox"/> ON/OFF	Tank Pressure (psi)	On-Line	Off-Line	Changed Air Filter?	Yes/No	Changed Oil?	Yes/No
----------------	--	---------------------	---------	----------	---------------------	--------	--------------	--------

AIR SPARGING SYSTEM MONITORING

COMPLIANCE

POINT NUMBER	Flow (scfm)	Pressure (psi)	Cycle On	Cycle Off	Cycle On	Cycle Off	DO NOT OPERATE VES UNLESS CONDITIONS ARE SATISFIED	
1	AS-1		12:00 AM	2:20 AM	2:00 PM	2:20 PM	Current Permit Posted?	<input checked="" type="checkbox"/> Yes/No
2	AS-2		2:20 AM	4:40 AM	4:20 PM	4:40 PM	VES Flow Rate <300 SCFM?	<input checked="" type="checkbox"/> Yes/No
3	AS-3		4:40 AM	7:00 AM	6:40 PM	7:00 PM	Temperature >1,500 °F?	<input checked="" type="checkbox"/> Yes/No
4	AS-4		7:00 AM	9:20 AM	9:00 PM	9:20 PM	Effluent VOC <50 ppmv (as Hex)?	<input checked="" type="checkbox"/> Yes/No
5	AS-5		9:20 AM	11:40 AM	9:20 PM	11:40 PM	Copies of Logs On-Site?	<input checked="" type="checkbox"/> Yes/No

MONTHLY CERTIFIED VAPOR SAMPLING

NOTE: Influent and Effluent Samples must be collected within 45 minutes of one another	Collect Sample	Sample Collected?	Sample Date	Sample Time	REQUIRED ANALYSIS AND SAMPLING CONTAINERS			EFFLUENT LIMITATIONS
					TPHg	BTEX & Standard Oxygenates	Benzene	VOCs = 50 ppmv
					EPA 8015 Mod.	EPA 8260B	EPA 410A	
Influent	Monthly	<input checked="" type="checkbox"/> YES/NO			1 Tedlar Bag			Benzene = 0.24 ppmv
Effluent	Monthly	<input checked="" type="checkbox"/> YES/NO			1 Tedlar Bag			
STATUS DEPARTURE:		ON/OFF			Drums	empty		full

Notes: List all activities, observations, recommendations

Did O & M and collected data

SECOR International, Incorporated
Air Sparging/Vapor Extraction Monitoring Log

SITE INFORMATION

CLIENT/SITE	Atlantic Richfield Company Station No. 5110		Unit:	Paragon Environmental Systems ET-250	
ADDRESS:	5731 East Firestone Boulevard, South Gate, California		Permit No.:	SCAQMD Permit-to-Operate No. F61746	
TECHNICIAN	Initials: <u>PAUL N</u>	Date: <u>11-4-04</u>	Weekday:	<u>THUR.</u>	Time: <u>9:00</u>
ARRIVAL STATUS:	<u>ON/OFF</u>	OPERATING HOURS:	<u>4:35.9</u>	Alarms:	<u>PDME</u>
UTILITIES	Gas Meter:	<u>23289</u>	cfm / therm:	Electrical Meter:	<u>27971</u> KWh

BLOWER/SKID

Temperature:	Process:	<u>151.3</u> °F	Post Cat.:	<u>151.3</u> °F
Process Flow:	<u>179</u> scfm	Change Chart Paper?	<u>Yes/No</u>	Manifold Vacuum:
Source Well Flow (Pilot Tube)	P: <u>179</u> scfm	AP: <u>60</u> "H ₂ O	Temp:	<u>174</u> scfm
Effluent Flow (Pilot Tube)	P: <u>179</u> scfm	AP: <u>60</u> "H ₂ O	Temp:	<u>174</u> scfm
Blower	Amps:	<u>26</u> A	Lubricate?	<u>Yes/No</u>
Dilution Valve	Auto:	<u>8</u> % open	Manual:	<u>8</u> % open
LEL Reading	Set:	<u>10</u> %	Alarm:	<u>10</u> %
VES Concentrations	Influent (Diluted)	<u>643</u> ppm	Influent (Undiluted)	<u>4.5</u> ppm
Monitoring Device	Calibration (type/date)	<u>100 HON 11-4-04</u>		

VAPOR EXTRACTION WELLS

Rid. reading express as Hexane

WELL NO.	Well Interval	Status O/C	Vacuum (Swc)	Conc. (ppmv)	ΔP ("wc)	Temp (Deg. F)	Flow (scfm)	DTW (ft)	Well Screen (ft)
SVE-1	Shallow	<u>100</u>	<u>60</u>	<u>93.2</u>					8 to 28
	Deep	<u>100</u>	<u>60</u>	<u>158.7</u>					35 to 55
SVE-2	Shallow	<u>100</u>	<u>60</u>	<u>245</u>					7 to 27
	Deep	<u>100</u>	<u>60</u>	<u>28.3</u>					35 to 55
SVE-3	Shallow	<u>100</u>	<u>60</u>	<u>57.4</u>					8 to 28
	Deep	<u>100</u>	<u>60</u>	<u>196</u>					35 to 55
SVE-4	Shallow	<u>100</u>	<u>60</u>	<u>196</u>					7 to 27
	Deep	<u>100</u>	<u>60</u>	<u>196</u>					35 to 55
SVE-5	Shallow	<u>100</u>	<u>60</u>	<u>196</u>					6 to 28
	Deep	<u>100</u>	<u>60</u>	<u>196</u>					34 to 56
MW-A7	Shallow	<u>100</u>	<u>60</u>	<u>196</u>					10 to 30
	Deep	<u>100</u>	<u>60</u>	<u>196</u>					35 to 65
VEW-2	Shallow	NOT CONNECTED TO SYSTEM							4 to 7
	Mid	NOT CONNECTED TO SYSTEM							12 to 29
	Deep	NOT CONNECTED TO SYSTEM							34 to 54
D-3		NOT CONNECTED TO SYSTEM							7 to 47

AIR COMPRESSOR MAINTENANCE

Air Compressor	<u>ON/OFF</u>	Tank Pressure (psi)	On-Line	Off-Line	Changed Air Filter?	Yes/No	Changed Oil?	Yes/No
----------------	---------------	---------------------	---------	----------	---------------------	--------	--------------	--------

AIR SPARGING SYSTEM MONITORING

COMPLIANCE

POINT NUMBER	Flow (scfm)	Pressure (psi)	Cycle On	Cycle Off	Cycle On	Cycle Off	DO NOT OPERATE VES UNLESS CONDITIONS ARE SATISFIED
1	AS-1		12:00 AM	2:20 AM	12:00 PM	2:20 PM	Current Permit Posted? <u>Yes/No</u>
2	AS-2		2:20 AM	4:40 AM	14:20 PM	4:40 PM	VES Flow Rate <300 SCFM? <u>Yes/No</u>
3	AS-3		4:40 AM	7:00 AM	16:40 PM	7:00 PM	Temperature >1,500 °F? <u>Yes/No</u>
4	AS-4		7:00 AM	9:20 AM	19:00 PM	9:20 PM	Effluent VOC <50 ppmv (as Hex)? <u>Yes/No</u>
5	AS-5		9:20 AM	11:40 AM	9:20 PM	11:40 PM	Copies of Logs On-Site? <u>Yes/No</u>

MONTHLY CERTIFIED VAPOR SAMPLING

NOTE: Influent and Effluent Samples must be collected within 15 minutes of one another	Collect Sample	Sample Collected?	Sample Date	Sample Time	REQUIRED ANALYSIS AND SAMPLING CONTAINERS			EFFLUENT LIMITATIONS
					TPHg EPA 8015 Mod.	BTEX & Standard Oxygenates EPA 8260B	Benzene EPA 410A	
Influent	Monthly	<u>YES/NO</u>			1 Tedlar Bag			VOCs = 50 ppmv
Effluent	Monthly	<u>YES/NO</u>			1 Tedlar Bag		1 Tedlar Bag	Benzene = 0.24 ppmv
STATUS DEPARTURE:					<u>ON/OFF</u>	Drums:	empty	full

Notes: List all activities, observations, recommendations

OWS 609K 0-0105
WR# WR 62293

SECOR International, Incorporated

Air Sparging/Vapor Extraction Monitoring Log

SITE INFORMATION

CLIENT/SITE	Atlantic Richfield Company Station No. 5110		Unit:	Paragon Environmental Systems ET-250	
ADDRESS	5731 East Firestone Boulevard, South Gate, California		Permit No.:	SCAQMD Permit to Operate No. F61746	
TECHNICIAN	Initials: <u>AYS WAKAS</u>	Date:	<u>11-12-04</u>	Weekday:	<u>FRI</u>
ARRIVAL STATUS:	<u>ON/OFF</u>	OPERATING HOURS:	<u>04546.6</u>	Alarms:	<u>0</u>
UTILITIES	Gas Meter:	<u>24255</u>	cfm / therm	Electrical Meter:	<u>28294</u> KWh

BLOWER SKID

Temperature	Process:	<u>1500</u>	°F	Post Cat.:	<u>1500</u>	°F
Process Flow	<u>177</u>	scfm	Change Chart Paper?	<u>Yes/No</u>	Manifold Vacuum:	<u>62</u> "H ₂ O
Source Well Flow (Pilot Tube)	P:	In H ₂ O	AP:	In H ₂ O	Temp:	<u>177</u> scfm
Effluent Flow (Pilot Tube)	P:	In H ₂ O	AP:	In H ₂ O	Temp:	scfm
Blower	Amps:	<u>27.5</u>	A	Lubricate?	<u>Yes/No</u>	Change Oil?
Dilution Valve	Auto:	<u>0</u>	% open	Manual:	<u>0</u>	% open
LEL Reading	Set:	<u>0</u>	%	Set:	<u>0</u>	%
VES Concentrations	Influent (Diluted)	<u>---</u>	ppm	Influent (Undiluted)	<u>3138</u>	ppm
Monitoring Device	<u>MINE RAE 2000</u>	Calibration (type/date)	<u>100 ppm Hex / 11-12-04</u>			

VAPOR EXTRACTION WELLS

Pid reading express as: hexane

WELL NO.	Well Interval	Status O/C	Vacuum ("wc)	Conc. (ppmv)	ΔP ("wc)	Temp (Deg. F)	Flow (scfm)	DTW (ft)	Well Screen (ft)
SVE-1	Shallow	<u>0</u>							8 to 28
	Deep	<u>100</u>	<u>62</u>	<u>26.7</u>					35 to 55
SVE-2	Shallow	<u>0</u>							7 to 27
	Deep	<u>100</u>	<u>62</u>	<u>38.14</u>					35 to 55
SVE-3	Shallow	<u>0</u>							8 to 28
	Deep	<u>100</u>	<u>62</u>	<u>21.8</u>					35 to 55
SVE-4	Shallow	<u>0</u>							7 to 27
	Deep	<u>100</u>	<u>62</u>	<u>21.2</u>					35 to 55
SVE-5	Shallow	<u>0</u>							8 to 28
	Deep	<u>100</u>	<u>62</u>	<u>16.8</u>					34 to 56
MW-A7	Shallow	<u>100</u>	<u>62</u>	<u>04.73-73.6</u>					10 to 30
	Deep								35 to 55
VEW-2	Shallow	NOT CONNECTED TO SYSTEM							4 to 7
	Mid	NOT CONNECTED TO SYSTEM							12 to 29
	Deep	NOT CONNECTED TO SYSTEM							34 to 54
D-3		NOT CONNECTED TO SYSTEM							7 to 47

AIR COMPRESSOR MAINTENANCE

Air Compressor	<u>ON/OFF</u>	Tank Pressure (psi)	On-Line	Off-Line	Changed Air Filter?	<u>Yes/No</u>	Changed Oil?	<u>Yes/No</u>
----------------	---------------	---------------------	---------	----------	---------------------	---------------	--------------	---------------

AIR SPARGING SYSTEM MONITORING

COMPLIANCE

POINT NUMBER	Flow (scfm)	Pressure (psi)	Cycle On	Cycle Off	Cycle On	Cycle Off	DO NOT OPERATE VES UNLESS CONDITIONS ARE SATISFIED	
1	AS-1		12:00 AM	2:20 AM	12:00 PM	2:20 PM	Current Permit Posted?	<u>Yes/No</u>
2	AS-2		2:20 AM	4:40 AM	14:20 PM	4:40 PM	VES Flow Rate < 300 SCFM?	<u>Yes/No</u>
3	AS-3		4:40 AM	7:00 AM	16:40 PM	7:00 PM	Temperature > 1,500 °F?	<u>Yes/No</u>
4	AS-4		7:00 AM	9:20 AM	19:00 PM	9:20 PM	Effluent VOC < 50 ppmv (as Hex)?	<u>Yes/No</u>
5	AS-5		9:20 AM	11:40 AM	9:20 PM	11:40 PM	Copies of Logs On-Site?	<u>Yes/No</u>

MONTHLY CERTIFIED VAPOR SAMPLING

NOTE: Influent and Effluent Samples must be collected within 15 minutes of one another.	Collect Sample	Sample Collected?	Sample Date	Sample Time	REQUIRED ANALYSIS AND SAMPLING CONTAINERS			EFFLUENT LIMITATIONS
					TPHg	BTEX & Standard Oxygenates	Benzene	
					EPA 8015 Mod.	EPA 8260B	EPA 410A	VOCs = 50 ppmv
Influent	Monthly	<u>YES/NO</u>			1 Tedlar Bag			Benzene = 0.24 ppmv
Effluent	Monthly	<u>YES/NO</u>			1 Tedlar Bag		1 Tedlar Bag	
STATUS DEPARTURE:		<u>ON/OFF</u>			Drums:	<u>empty</u>	full	

Notes: List all activities, observations, recommendations

SYSTEM WAS ON UPON ARRIVAL, DEP. OCM, COLLECTED ALL DATA AND CLEANED THE COMPOUND. SYSTEM WAS ON UPON DEPARTURE

SECOR International, Incorporated

Air Sparging/Vapor Extraction Monitoring Log

SITE INFORMATION

CLIENT/SITE	Atlantic Richfield Company Station No. 5110		Unit:	Paragon Environmental Systems ET-250	
ADDRESS	5731 East Firestone Boulevard, South Gate, California		Permit No.:	SCAQMD Permit-to-Operate No. F61746	
TECHNICIAN	Initials: <u>Tom Mickelson</u>	Date:	<u>11-18-04</u>	Weekday:	<u>Thurs</u>
ARRIVAL STATUS:	<u>ON/OFF</u>	OPERATING HOURS:	<u>4650.4</u>	Alarms:	<u>None</u>
UTILITIES	Gas Meter	<u>24453</u>	cfm / therm	Electrical Meter	<u>30257</u> KWh
BLOWER SKID:					
Temperature:	Process: <u>1524</u>	"F	Post Cat: <u>1524</u>	"F	
Process Flow	<u>168</u>	scfm	Change Chart Paper?	<u>Yes/No</u>	Manifold Vacuum: <u>64</u> "H ₂ O
Source Well Flow (Pilot Tube)	Pilot	In H ₂ O	AP	In H ₂ O	Temp: Source Flow: <u>168</u> scfm
Effluent Flow (Pilot Tube)	Pilot	In H ₂ O	AP	In H ₂ O	Temp: Effluent Flow: scfm
Blower	Amps: <u>264</u>	A	Lubricate?	Yes/No	Change Oil? Yes/No Belts OK? <u>Yes/No</u>
Dilution Valve	Auto: <u>Closed</u>	% open	Manual: <u>Closed</u>	% open	
LEL Reading	Set	% PV		%	
VES Concentrations	Influent (Diluted) <u>NO DETECTION</u> ppm	Influent (Undiluted) <u>6.23</u> ppm	Effluent <u>2.2</u> ppm		
Monitoring Device	<u>MIR RAE 2000</u>		Calibration (type/date)	<u>Hexane 10ppm 11-18-04</u>	

VAPOR EXTRACTION WELLS

Rld reading express as Hexane

WELL NO.	Well Interval	Status O/C	Vacuum (in Hg)	Conc. (ppmv)	AP (in Hg)	Temp (Deg. F)	Flow (scfm)	DTW (ft)	Well Screen (ft)
SVE-1	Shallow	<u>Closed</u>	-	-					8 to 28
	Deep	<u>100%</u>	<u>64"</u>	<u>108</u>					35 to 55
SVE-2	Shallow	<u>Closed</u>	-	-					7 to 27
	Deep	<u>100%</u>	<u>64"</u>	<u>1496</u>					35 to 55
SVE-3	Shallow	<u>Closed</u>	-	-					8 to 28
	Deep	<u>100%</u>	<u>64"</u>	<u>271</u>					35 to 55
SVE-4	Shallow	<u>Closed</u>	-	-					7 to 27
	Deep	<u>100%</u>	<u>64"</u>	<u>34.9</u>					35 to 55
SVE-5	Shallow	<u>Closed</u>	-	-					6 to 28
	Deep	<u>100%</u>	<u>64"</u>	<u>66.6</u>					34 to 56
MW-A7	Shallow	<u>100%</u>	<u>64"</u>	<u>152</u>					10 to 30
	Deep								35 to 65
VEW-2	Shallow	NOT CONNECTED TO SYSTEM							4 to 7
	Mid	NOT CONNECTED TO SYSTEM							12 to 29
	Deep	NOT CONNECTED TO SYSTEM							34 to 54
D-8		NOT CONNECTED TO SYSTEM							7 to 47

AIR COMPRESSOR MAINTENANCE

Air Compressor	ON/OFF	Tank Pressure (psi)	On-Line	Off-Line	Changed Air Filter?	Yes/No	Changed Oil?	Yes/No
	<u>OFF</u>		<u>OFF</u>					

AIR SPARGING SYSTEM MONITORING

COMPLIANCE

POINT NUMBER	Flow (scfm)	Pressure (psi)	Cycle On	Cycle Off	Cycle On	Cycle Off	DO NOT OPERATE VES UNLESS CONDITIONS ARE SATISFIED	
1 AS-1	<u>OFF</u>	<u>OFF</u>	12:00 AM	2:20 AM	12:00 PM	2:20 PM	Current Permit Posted?	<u>Yes/No</u>
2 AS-2			2:20 AM	4:40 AM	14:20 PM	4:40 PM	VES Flow Rate < 300 SCFM?	<u>Yes/No</u>
3 AS-3			4:40 AM	7:00 AM	16:40 PM	7:00 PM	Temperature > 1,500 °F?	<u>Yes/No</u>
4 AS-4			7:00 AM	9:20 AM	18:00 PM	9:20 PM	Effluent VOC < 50 ppmv (as Hex)?	<u>Yes/No</u>
5 AS-5			9:20 AM	11:40 AM	9:20 PM	11:40 PM	Copies of Logs On-Site?	<u>Yes/No</u>

MONTHLY CERTIFIED VAPOR SAMPLING

NOTE: Influent and Effluent Samples must be collected within 15 minutes of one another.	Collect Sample	Sample Collected?	Sample Date	Sample Time	REQUIRED ANALYSIS AND SAMPLING CONTAINERS			EFFLUENT LIMITATIONS
					TPHg	BTEX & Standard Oxygenates	Benzene	VOCs = 50 ppmv
					EPA 8015 Mod.	EPA 8260B	EPA 410A	
Influent	Monthly	YES/NO			1 Tedlar Bag			Benzene = 0.24 ppmv
Effluent	Monthly	YES/NO			1 Tedlar Bag			
STATUS DEPARTURE:		ON/OFF				Drums	empty	full

Notes: List all activities, observations, recommendations

System was up Site was Clean, Permit is up to Date, left system ON.

SECOR International, Incorporated

Air Sparging/Vapor Extraction Monitoring Log

SITE INFORMATION

CLIENT/SITE ADDRESS	Atlantic Richfield Company Station No. 5110 5731 East Firestone Boulevard, South Gate, California		Unit: Paragon Environmental Systems ET-250
TECHNICIAN	Initials: <u>ENS WAMAS</u>	Date: <u>11-23-04</u>	Weekday: <u>THES</u> Time: <u>0600</u>
ARRIVAL STATUS:	ON/OFF: <u>ON</u>	OPERATING HOURS: <u>4751.5</u>	Alarms: <u>HI TEMP</u>
UTILITIES	Gas Meter: <u>25308</u> cfm / therm	Electrical Meter: <u>30712</u>	KWh

BLOWER/SKID

Temperature	Process: <u>1519</u> °F	Post Cat: <u>1519</u> °F
Process Flow	<u>193</u> scfm	Change Chart Paper? <u>Yes/No</u>
Source Well Flow (Pitot Tube)	P: <u>193</u> In H ₂ O AP: <u>193</u> In H ₂ O Temp: <u>193</u> °F	Source Flow: <u>193</u> scfm
Effluent Flow (Pitot Tube)	P: <u>193</u> In H ₂ O AP: <u>193</u> In H ₂ O Temp: <u>193</u> °F	Effluent Flow: <u>193</u> scfm
Blower	Amps: <u>25.6</u> A Lubricate? <u>Yes/No</u>	Change Oil? <u>Yes/No</u> Belts OK? <u>Yes/No</u>
Dilution Valve	Auto: <u>0</u> % open Manual: <u>0</u> % open	
UEL Reading	Set: <u>0</u> % EV <u>0</u> %	
VES Concentrations	Influent (Diluted) <u>—</u> ppm Influent (Undiluted) <u>4879</u> ppm	Effluent <u>6.1</u> ppm
Monitoring Device	<u>LINE ZAE 2000</u>	Calibration (type/date) <u>100 PPM Hex 11-23-04</u>

VAPOR EXTRACTION WELLS

Pld reading express as Hexane

WELL NO.	Well Interval	Status O/C	Vacuum (in wc)	Conc. (ppmv)	AP (in wc)	Temp (Deg. F)	Flow (scfm)	DTW (ft)	Well Screen (ft)
SVE-1	Shallow	<u>0</u>							8 to 28
	Deep	<u>100</u>	<u>48</u>	<u>122</u>					35 to 55
SVE-2	Shallow	<u>0</u>							7 to 27
	Deep	<u>100</u>	<u>48</u>	<u>4613</u>					35 to 55
SVE-3	Shallow	<u>0</u>							8 to 28
	Deep	<u>100</u>	<u>48</u>	<u>89.1</u>					35 to 55
SVE-4	Shallow	<u>0</u>							7 to 27
	Deep	<u>100</u>	<u>48</u>	<u>219</u>					35 to 55
SVE-5	Shallow	<u>0</u>							6 to 28
	Deep	<u>100</u>	<u>48</u>	<u>186</u>					34 to 56
MW-A7	Shallow	<u>100</u>	<u>48</u>	<u>1204</u>					40 to 30
	Deep								85 to 65
VEW-2	Shallow	NOT CONNECTED TO SYSTEM							4 to 7
	Mid	NOT CONNECTED TO SYSTEM							12 to 29
	Deep	NOT CONNECTED TO SYSTEM							34 to 54
D-3		NOT CONNECTED TO SYSTEM							17 to 47

AIR COMPRESSOR MAINTENANCE

Air Compressor	ON/OFF: <u>ON</u>	Tank Pressure (psi)	On-Line	Off-Line	Changed Air Filter?	Yes/No: <u>No</u>	Changed Oil?	Yes/No: <u>No</u>
----------------	-------------------	---------------------	---------	----------	---------------------	-------------------	--------------	-------------------

AIR SPARGING SYSTEM MONITORING

COMPLIANCE

POINT NUMBER	Flow (scfm)	Pressure (psi)	Cycle On	Cycle Off	Cycle On	Cycle Off	DO NOT OPERATE VES UNLESS CONDITIONS ARE SATISFIED
1 AS-1			12:00 AM	2:20 AM	12:00 PM	2:20 PM	Current Permit Posted? <u>Yes/No</u>
2 AS-2			2:20 AM	4:40 AM	14:20 PM	4:40 PM	VES Flow Rate <300 SCFM? <u>Yes/No</u>
3 AS-3			4:40 AM	7:00 AM	16:40 PM	7:00 PM	Temperature > 1,500 °F? <u>Yes/No</u>
4 AS-4			7:00 AM	9:20 AM	19:00 PM	9:20 PM	Effluent VOC <50 ppmv (as Hex)? <u>Yes/No</u>
5 AS-5			9:20 AM	11:40 AM	21:40 PM	11:40 PM	Copies of Logs On-Site? <u>Yes/No</u>

MONTHLY CERTIFIED VAPOR SAMPLING

NOTE: Influent and Effluent Samples must be collected within 15 minutes of one another	Collect Sample	Sample Collected?	Sample Date	Sample Time	REQUIRED ANALYSIS AND SAMPLING CONTAINERS			EFFLUENT LIMITATIONS
					TPHg EPA 8015 Mod.	BTEX & Standard Oxygenates EPA 8260B	Benzene EPA 410A	
Influent	Monthly	YES/NO: <u>YES</u>			1 Tedlar Bag			VOCs = 50 ppmv
Effluent	Monthly	YES/NO: <u>YES</u>			1 Tedlar Bag		1 Tedlar Bag	Benzene = 0.24 ppmv
STATUS DEPARTURE: <u>ON/OFF</u>					Drums:	<u>empty</u>		full

Notes: List all activities, observations, recommendations

SYSTEM WAS OFF UPON ARRIVAL, HI TEMP ALARM, RESTAINED BY SYSTEM
DID NOT COLLECT, COLLECTED ALL DATA AND CLEANED THE COMPRESSOR
THE SYSTEM OFF FOR REPAIRS, SYSTEM WAS ON UPON DEPARTURE

All O&M activities must be conducted every seven days or sooner unless otherwise indicated by a "(Monthly)" note.

SECOR International, Incorporated

Air Sparging/Vapor Extraction Monitoring Log

SITE INFORMATION

CLIENT/SITE	Atlantic Richfield Company Station No. 5110		Unit:	Paragon Environmental Systems ET-250	
ADDRESS	5731 East Firestone Boulevard, South Gate, California		Permit No.:	SCAQMD Permit-to Operate No. F61746	
TECHNICIAN	Initials: <u>ROS UMAS</u>	Date:	<u>12-2-04</u>	Weekday:	<u>THURS</u>
ARRIVAL STATUS:	<u>ON/OFF</u>	OPERATING HOURS:	<u>4925.3</u>	Alarms:	<u>FSC HAULT</u>
UTILITIES	Gas Meter	<u>26252</u>	cfm / therm	Electrical Meter	<u>31895</u> KWh

BLOWER/SKID

Temperature	Process:	<u>1518</u>	°F	Post Cat.:	<u>1518</u>	°F
Process/Flow		<u>193</u>	scfm	Change Chart Paper?	<u>Yes/No</u>	Manifold Vacuum:
Source Well Flow (Pilot Tube)	P:	<u>193</u>	scfm	Temp:		°F
Effluent Flow (Pilot Tube)	P:	<u>193</u>	scfm	Temp:		°F
Blower	Amps:	<u>25.8</u>	A	Lubricate?	<u>Yes/No</u>	Change Oil?
Dilution Valve	Auto:	<u>0</u>	%open	Manual:	<u>0</u>	%open
L/EI Reading	Set:		%	RV:		%
VES Concentrations	Influent (Diluted)		ppm	Influent (Undiluted)	<u>822</u>	ppm
Monitoring Device				Effluent	<u>1.1</u>	ppm
	MINT RAE 3000		Calibration (type/date) <u>100 PPH Hex / 12-2-04</u>			

VAPOR EXTRACTION WELLS

Pld reading express as Hexane

WELL NO.	Well Interval	Status O/C	Vacuum ("wc)	Conc. (ppmv)	ΔP ("wc)	Temp (Deg. F)	Flow (scfm)	DTW (ft)	Well Screen (ft)
SVE-1	Shallow	<u>0</u>							8 to 28
	Deep	<u>100</u>		<u>97.2</u>					35 to 55
SVE-2	Shallow	<u>0</u>							7 to 27
	Deep	<u>100</u>		<u>2418</u>					35 to 55
SVE-3	Shallow	<u>0</u>							8 to 28
	Deep	<u>100</u>		<u>88.6</u>					35 to 55
SVE-4	Shallow	<u>0</u>							7 to 27
	Deep	<u>100</u>		<u>123</u>					35 to 55
SVE-5	Shallow	<u>0</u>							6 to 28
	Deep	<u>100</u>		<u>201</u>					34 to 56
MW-A7	Shallow	<u>100</u>		<u>906</u>					10 to 30
	Deep								35 to 55
VEW-2	Shallow	NOT CONNECTED TO SYSTEM							4 to 7
	Mid	NOT CONNECTED TO SYSTEM							12 to 29
	Deep	NOT CONNECTED TO SYSTEM							34 to 54
D-3		NOT CONNECTED TO SYSTEM							7 to 47

AIR COMPRESSOR MAINTENANCE

Air Compressor	<u>ON/OFF</u>	Tank Pressure (psi)	On-Line	Off-Line	Changed Air Filter?	Yes/No	Changed Oil?	Yes/No
----------------	---------------	---------------------	---------	----------	---------------------	--------	--------------	--------

AIR SPARGING SYSTEM MONITORING

COMPLIANCE

POINT NUMBER	Flow (scfm)	Pressure (psi)	Cycle On	Cycle Off	Cycle On	Cycle Off	DO NOT OPERATE VES UNLESS CONDITIONS ARE SATISFIED
1	AS-1		12:00 AM	2:20 AM	12:00 PM	12:20 PM	Current Permit Posted?
2	AS-2		2:20 AM	4:40 AM	14:20 PM	4:40 PM	VES Flow Rate <300 SCFM?
3	AS-3		4:40 AM	7:00 AM	16:40 PM	7:00 PM	Temperature >1,500 °F?
4	AS-4		7:00 AM	9:20 AM	19:00 PM	9:20 PM	Effluent VOC <50 ppmv (as Hex)?
5	AS-5		9:20 AM	11:40 AM	9:20 PM	11:40 PM	Copies of Logs On-Site?

MONTHLY CERTIFIED VAPOR SAMPLING

NOTE: Influent and Effluent Samples must be collected within 15 minutes of one another.	Collect Sample	Sample Collected?	Sample Date	Sample Time	REQUIRED ANALYSIS AND SAMPLING CONTAINERS			EFFLUENT LIMITATIONS
					TPHg EPA 8015 Mod.	BTEX & Standard Oxygenates EPA 8260B	Benzene EPA 410A	VOCs = 50 ppmv
Influent	Monthly	YES/NO			1 Tedlar Bag			Benzene = 0.24 ppmv
Effluent	Monthly	YES/NO			1 Tedlar Bag	1 Tedlar Bag		
STATUS DEPARTURE:					<u>ON/OFF</u>	Drums	<u>empty</u>	full

Notes: List all activities, observations, recommendations

SYSTEM WAS OFF UPON ARRIVAL. RESTARTED SYSTEM. DID O&M, COLLECTED ALL DATA AND CLEANED THE COMPOUND SYSTEM WAS ON UPON DEPARTURE

All O&M activities must be conducted every seven days or sooner unless otherwise indicated by a "(Monthly)" note.

SECOR International, Incorporated

Air Sparging/Vapor Extraction Monitoring Log

SITE INFORMATION

CLIENT/SITE	Atlantic Richfield Company Station No. 5110		Unit:	Paragon Environmental Systems ET-250	
ADDRESS	5731 East Firestone Boulevard, South Gate, California		Permit No.:	SCAQMD Permit-to Operate No. F61746	
TECHNICIAN	Initials: <u>Gos WAMAS</u>	Date:	<u>12-9-04</u>	Weekday:	<u>THURS</u>
ARRIVAL STATUS:	<u>ON/OFF</u>	OPERATING HOURS:	<u>0509-2-3</u>	Alarms:	<u>0</u>
UTILITIES	Gas Meter	<u>27147</u>	cfm / therm	Electrical Meter	<u>33056</u> KWh

BLOWER/SKID

Temperature	Process:	<u>1506</u>	°F	Post Cat.:	<u>1507</u>	°F
Process Flow		<u>180</u>	scfm	Change Chart Paper?	<u>Yes/No</u>	Manifold Vacuum:
Source Well Flow (Pitot Tube)	P:	<u>180</u>	scfm	Source Flow:	<u>180</u>	scfm
Effluent Flow (Pitot Tube)	P:	<u>180</u>	scfm	Effluent Flow:	<u>180</u>	scfm
Blower	Amps:	<u>27.8</u>	A	Lubricate?	<u>(Yes/No)</u>	Change Oil?
Dilution Valve	Auto:	<u>0</u>	%open	Manual:	<u>0</u>	%open
LEL Reading	Set:	<u>0</u>	%	RV:	<u>0</u>	%
VES Concentrations	Influent (Diluted)	<u>—</u>	ppm	Influent (Undiluted)	<u>36.4</u>	ppm
Monitoring Device		<u>MINI RAE 7000</u>		Calibration (type/date)	<u>100 PPM Hex 12-9-04</u>	

VAPOR EXTRACTION WELLS

Pid reading express as Hexane

WELL NO.	Well Interval	Status O/C	Vacuum ("wc)	Conc. (ppmv)	ΔP ("wc)	Temp (Deg. F)	Flow (scfm)	DTW (ft)	Well Screen (ft)
SVE-1	Shallow	<u>0</u>							8 to 28
	Deep	<u>100</u>	<u>62</u>	<u>86.1</u>					35 to 55
SVE-2	Shallow	<u>0</u>							7 to 27
	Deep	<u>100</u>	<u>62</u>	<u>199.8</u>					35 to 55
SVE-3	Shallow	<u>0</u>							8 to 28
	Deep	<u>100</u>	<u>62</u>	<u>92.4</u>					35 to 55
SVE-4	Shallow	<u>0</u>							7 to 27
	Deep	<u>100</u>	<u>62</u>	<u>96.1</u>					35 to 55
SVE-5	Shallow	<u>0</u>							6 to 28
	Deep	<u>100</u>	<u>62</u>	<u>203</u>					34 to 58
MW-A7	Shallow	<u>100</u>	<u>62</u>	<u>409</u>					10 to 30
	Deep								35 to 65
VEW-2	Shallow	NOT CONNECTED TO SYSTEM							4 to 7
	Mid	NOT CONNECTED TO SYSTEM							12 to 29
	Deep	NOT CONNECTED TO SYSTEM							34 to 54
D-3		NOT CONNECTED TO SYSTEM							7 to 47

AIR COMPRESSOR MAINTENANCE

Air Compressor	<u>ON/OFF</u>	Tank Pressure (psi)	On-Line	Off-Line	Changed Air Filter?	Yes <u>No</u>	Changed Oil?	Yes <u>No</u>
----------------	---------------	---------------------	---------	----------	---------------------	---------------	--------------	---------------

AIR SPARGING SYSTEM MONITORING

COMPLIANCE

POINT NUMBER	Flow (scfm)	Pressure (psi)	Cycle On	Cycle Off	Cycle On	Cycle Off	DO NOT OPERATE VES UNLESS CONDITIONS ARE SATISFIED	
1 AS-1			12:00 AM	2:20 AM	12:00 PM	2:20 PM	Current Permit Posted?	<u>Yes/No</u>
2 AS-2			2:20 AM	4:40 AM	14:20 PM	4:40 PM	VES Flow Rate <300 SCFM?	<u>Yes/No</u>
3 AS-3			4:40 AM	7:00 AM	16:40 PM	7:00 PM	Temperature >1,500 °F?	<u>Yes/No</u>
4 AS-4			7:00 AM	9:20 AM	18:00 PM	9:20 PM	Effluent VOC <50 ppmv (as Hex)?	<u>Yes/No</u>
5 AS-5			9:20 AM	11:40 AM	8:20 PM	11:40 PM	Copies of Logs On-Site?	<u>Yes/No</u>

MONTHLY CERTIFIED VAPOR SAMPLING

NOTE: Influent and Effluent Samples must be collected within 15 minutes of one another	Collect Sample	Sample Collected?	Sample Date	Sample Time	REQUIRED ANALYSIS AND SAMPLING CONTAINERS			EFFLUENT LIMITATIONS
					TPHg	BTEX & Standard Oxygenates	Benzene	
					EPA 8015 Mod.	EPA 8260B	EPA 410A	VOCs = 50 ppmv
Influent	Monthly	<u>YES/NO</u>	<u>12-9-04</u>	<u>0820</u>	1 Tedlar Bag			Benzene = 0.24 ppmv
Effluent	Monthly	<u>YES/NO</u>	<u>12-9-04</u>	<u>0815</u>	1 Tedlar Bag		1 Tedlar Bag	
STATUS/DEPARTURE:		<u>ON/OFF</u>			Drums:	<u>empty</u>		full

Notes: List all activities, observations, recommendations

SYSTEM WAS ON UPON ARRIVAL. DID O&M, COLLECTED ALL DATA, TOOK MONTHLY SAMPLES, AND ADJUSTED AND CHANGED THE BLOWER. O&M SYSTEM WAS ON UPON DEPARTURE.

All O&M activities must be conducted every seven days or sooner unless otherwise indicated by a "(Monthly)" note.

SECOR International, Incorporated

Air Sparging/Vapor Extraction Monitoring Log

SITE INFORMATION

CLIENT/SITE ADDRESS	Atlantic Richfield Company Station No. 5110 5731 East Firestone Boulevard, South Gate, California		Unit:	Paragon Environmental Systems ET-250	
TECHNICIAN	Initials: GUS UAMAS	Date: 12-16-04	Weekday:	THURS	Time: 0700
ARRIVAL STATUS:	<input checked="" type="checkbox"/> ON/OFF	OPERATING HOURS:	05259.2	Alarms:	<input checked="" type="checkbox"/>
UTILITIES	Gas Meter	28003	cfm / therm:	Electrical Meter:	34218 KWh

BLOWER SKID

Temperature	Process:	1511	°F	Post Cat.:	1511	°F
Process Flow	176	scfm	Change Chart Paper?	<input checked="" type="checkbox"/> Yes/No	Manifold Vacuum:	176 63 "H ₂ O
Source Well Flow (Pitot Tube)	P	In H ₂ O	AP	In H ₂ O	Temp:	F
Effluent Flow (Pitot Tube)	P	In H ₂ O	AP	In H ₂ O	Temp:	F
Blower	Amps:	28.9	A	Lubricate?	Yes/No	Change Oil?
Dilution Valve	Auto:	<input checked="" type="checkbox"/>	%open	Manual:	<input checked="" type="checkbox"/>	%open
VEL Reading	Set:		%	RV		%
VES Concentrations	Influent (Diluted)		ppm	Influent (Undiluted)	1438	ppm
Monitoring Device	MW-2	DAE 2000	Calibration (type/date)	100 RPH HX/12-16-04		

VAPOR EXTRACTION WELLS

Pld reading express as Hexane

WELL NO.	Well Interval	Status O/C	Vacuum ("wc)	Conc. (ppmv)	AP ("wc)	Temp (Deg. F)	Flow (scfm)	DTW (ft)	Well Screen (ft)
SVE-1	Shallow	<input checked="" type="checkbox"/>							8 to 28
	Deep	100	63	96.7					35 to 55
SVE-2	Shallow	<input checked="" type="checkbox"/>							7 to 27
	Deep	100	63	2133					35 to 55
SVE-3	Shallow	<input checked="" type="checkbox"/>							8 to 28
	Deep	100	63	93.6					35 to 55
SVE-4	Shallow	<input checked="" type="checkbox"/>							7 to 27
	Deep	100	63	81.9					35 to 55
SVE-5	Shallow	<input checked="" type="checkbox"/>							6 to 28
	Deep	100	63	76.1					34 to 56
MW-A7	Shallow	100	63	80.1					10 to 30
	Deep								35 to 65
VEW-2	Shallow	NOT CONNECTED TO SYSTEM							4 to 7
	Mid	NOT CONNECTED TO SYSTEM							12 to 29
	Deep	NOT CONNECTED TO SYSTEM							34 to 64
D-3		NOT CONNECTED TO SYSTEM							7 to 47

AIR COMPRESSOR MAINTENANCE

Air Compressor	<input checked="" type="checkbox"/> ON/OFF	Tank Pressure (psi)	On-Line	Off-Line	Changed Air Filter?	Yes/No	Changed Oil?	Yes/No
----------------	--	---------------------	---------	----------	---------------------	--------	--------------	--------

AIR SPARGING SYSTEM MONITORING

COMPLIANCE

POINT NUMBER	Flow (scfm)	Pressure (psi)	Cycle On	Cycle Off	Cycle On	Cycle Off	DO NOT OPERATE VES UNLESS CONDITIONS ARE SATISFIED
1 AS-1			12:00 AM	2:20 AM	12:00 PM	2:20 PM	Current Permit Posted?
2 AS-2			2:20 AM	4:40 AM	14:20 PM	4:40 PM	VES Flow Rate <300 SCFM?
3 AS-3			4:40 AM	7:00 AM	16:40 PM	7:00 PM	Temperature >1,500 °F?
4 AS-4			7:00 AM	9:20 AM	18:00 PM	9:20 PM	Effluent VOC <50 ppmv (as Hex)?
5 AS-5			9:20 AM	11:40 AM	9:20 PM	11:40 PM	Copies of Logs On-Site?

MONTHLY CERTIFIED VAPOR SAMPLING

NOTE: Influent and Effluent Samples must be collected within 15 minutes of one another	Collect Sample	Sample Collected?	Sample Date	Sample Time	REQUIRED ANALYSIS AND SAMPLING CONTAINERS			EFFLUENT LIMITATIONS
					TPHg EPA 8015 Mod.	BTEX & Standard Oxygenates EPA 8260B	Benzene EPA 410A	
Influent	Monthly	<input checked="" type="checkbox"/> YES/NO	12-16-04	0750	1 Tedlar Bag			VOCs = 50 ppmv Benzene = 0.24 ppmv
Effluent	Monthly	<input checked="" type="checkbox"/> YES/NO	12-16-04	0745	1 Tedlar Bag			
STATUS/DEPARTURE:		<input checked="" type="checkbox"/> ON/OFF			Drums:	<input checked="" type="checkbox"/> empty		full

Notes: List all activities, observations, recommendations

SYSTEM WAS ON UPON ARRIVAL. RESAMPLED. DID O&M, COLLECTED
 ALL DATA AND CLEANED THE COMPRESSOR. SYSTEM WAS ON UPON
 DEPARTURE

SECOR International, Incorporated

Air Sparging/Vapor Extraction Monitoring Log

SITE INFORMATION

CLIENT/SITE	Atlantic Richfield Company Station No. 5110		Unit:	Paragon Environmental Systems ET-250	
ADDRESS	5731 East Firestone Boulevard, South Gate, California		Permit No.:	SCAQMD Permit-to-Operate No. F61746	
TECHNICIAN	Initials: GUS WAMAS	Date:	12-23-01	Weekday:	THURS
ARRIVAL STATUS:	ON/OFF	OPERATING HOURS:	05426.5	Alarms:	0
UTILITIES	Gas Meter	28863	cfm / therm	Electrical Meter	35335 KWh
BLOWER-SKID:					
Temperature	Process:	1512	°F	Post Cat.:	1512 °F
Process Flow	197	scfm	Change Chart Paper?	Yes/No	Manifold Vacuum: 61 "H ₂ O
Source Well Flow (Pilot Tube)	P1	In H ₂ O ΔP	In H ₂ O Temp	Source Flow:	197 scfm
Effluent Flow (Pilot Tube)	P2	In H ₂ O ΔP	In H ₂ O Temp	Effluent Flow:	scfm
Blower	Amps:	28.3	A Lubricate?	Yes/No	Change Oil?
Dilution Valve	Auto:	←	%open	Manual:	0 %open
LEL Reading	Set:		%	PV:	%
VES Concentrations	Influent (Diluted)	—	ppm	Influent (Undiluted)	1206 ppm
				Effluent	6.9 ppm
Monitoring Device	MINT RAE 2000		Calibration (type/date) 100 PDM Hex / 12-23-01		

VAPOR EXTRACTION WELLS

Pid reading express as Hexane

WELL NO.	Well Interval	Status O/C	Vacuum (inwc)	Conc. (ppmv)	ΔP (inwc)	Temp (Deg. F)	Flow (scfm)	DTW (ft)	Well Screen (ft)
SVE-1	Shallow	0							8 to 28
	Deep	100	61	28.2					35 to 55
SVE-2	Shallow	0							7 to 27
	Deep	100	61	1984					35 to 55
SVE-3	Shallow	0							8 to 28
	Deep	100	61	101					35 to 55
SVE-4	Shallow	0							7 to 27
	Deep	100	61	96.4					35 to 55
SVE-5	Shallow	0							8 to 28
	Deep	100	61	68.3					34 to 56
MW-A7	Shallow	100	61	771					10 to 30
	Deep	100	61						35 to 65
VEW-2	Shallow	NOT CONNECTED TO SYSTEM							4 to 7
	Mid	NOT CONNECTED TO SYSTEM							12 to 29
	Deep	NOT CONNECTED TO SYSTEM							34 to 54
D-3		NOT CONNECTED TO SYSTEM							7 to 47

AIR COMPRESSOR MAINTENANCE

Air Compressor	ON/OFF	Tank Pressure (psi)	On-Line	Off-Line	Changed Air Filter?	Yes/No	Changed Oil?	Yes/No
	ON		—	—		Yes		

AIR SPARGING SYSTEM MONITORING

COMPLIANCE

POINT NUMBER	Flow (scfm)	Pressure (psi)	Cycle On	Cycle Off	Cycle On	Cycle Off	DO NOT OPERATE VES UNLESS CONDITIONS ARE SATISFIED	
1 AS-1			12:00 AM	2:20 AM	12:00 PM	2:20 PM	Current Permit Posted?	Yes/No
2 AS-2			2:20 AM	4:40 AM	14:20 PM	14:40 PM	VES Flow Rate < 300 SCFM?	Yes/No
3 AS-3			4:40 AM	7:00 AM	16:40 PM	7:00 PM	Temperature > 1,500 °F?	Yes/No
4 AS-4			7:00 AM	9:20 AM	19:00 PM	9:20 PM	Effluent VOC < 50 ppmv (as Hex)?	Yes/No
5 AS-5			9:20 AM	11:40 AM	9:20 PM	11:40 PM	Copies of Logs On-Site?	Yes/No

MONTHLY CERTIFIED VAPOR SAMPLING

	Collect Sample	Sample Collected?	Sample Date	Sample Time	REQUIRED ANALYSIS AND SAMPLING CONTAINERS			EFFLUENT LIMITATIONS
					TPHg EPA 6015 Mod.	BTEX & Standard Oxygenates EPA 8260B	Benzene EPA 410A	
Influent	Monthly	YES/NO			1 Tedlar Bag			VOCs = 50 ppmv
Effluent	Monthly	YES/NO			1 Tedlar Bag			Benzene = 0.24 ppmv
STATUS DEPARTURE:		ON/OFF			Drums	empty	full	

Notes: List all activities, observations, recommendations

SYSTEM WAS ON UPON ARRIVAL DID NOT COLLECT ANY DATA - SYSTEM WAS ON UPON DEPARTURE

All O&M activities must be conducted every seven days or sooner unless otherwise indicated by a "(Monthly)" note.

SECOR International, Incorporated

Air Sparging/Vapor Extraction Monitoring Log

SITE INFORMATION

CLIENT/SITE ADDRESS	Atlantic Richfield Company Station No. 5110		Unit:	Paragon Environmental Systems ET-250	
TECHNICIAN	Initials: BUS WAMAS	Date:	12-30-01	Weekday:	THURSDAY
ARRIVAL STATUS:	ON/OFF	OPERATING HOURS:	5566.1	Alarms:	FSC FAULT
UTILITIES	Gas Meter:	29559	cfm / therm	Electrical Meter:	36428 KWh

BLOWER/SKID

Temperature	Process:	1515	°F	Post Cat.:	1515	°F
Process Flow	178	scfm	Change Chart Paper?	Yes/No	Manifold Vacuum:	61
Source Well Flow (Pilot Tube)	P:	In H ₂ O	AP:	In H ₂ O	Temp:	°F
Effluent Flow (Pilot Tube)	P:	In H ₂ O	AP:	In H ₂ O	Temp:	°F
Blower	Amps:	28.6	A	Lubricate?	Yes/No	Change Oil?
Dilution Valve	Auto:	0	% open	Manual:	0	% open
LEL Reading	Set		% PM			% PM
VES Concentrations	Influent (Diluted)		ppm	Influent (Undiluted)	1323	ppm
Monitoring Device	MONITOR RAE 2000			Calibration (type/date)	100 PPM Hex/12-30-01	

VAPOR EXTRACTION WELLS

Rld reading express as Hexane

WELL NO.	Well Interval	Status O/C	Vacuum (Inch)	Conc. (ppmv)	ΔP (Inch)	Temp (Deg. F)	Flow (scfm)	DTW (ft)	Well Screen (ft)
SVE-1	Shallow	0							8 to 28
	Deep	100	61	123					35 to 55
SVE-2	Shallow	0							7 to 27
	Deep	100	61	1981					35 to 55
SVE-3	Shallow	0							8 to 28
	Deep	100	61	101					35 to 55
SVE-4	Shallow	0							7 to 27
	Deep	100	61	73.8					35 to 55
SVE-5	Shallow	0							6 to 28
	Deep	100	61	69.7					34 to 56
MW-A7	Shallow	100	61	789					10 to 30
	Deep								35 to 65
VEW-2	Shallow				NOT CONNECTED TO SYSTEM				4 to 7
	Mid				NOT CONNECTED TO SYSTEM				12 to 29
	Deep				NOT CONNECTED TO SYSTEM				34 to 54
D-3					NOT CONNECTED TO SYSTEM				7 to 47

AIR COMPRESSOR MAINTENANCE

Air Compressor	ON/OFF	Tank Pressure (psi)	On-Line	Off-Line	Changed Air Filter?	Yes/No	Changed Oil?	Yes/No
----------------	--------	---------------------	---------	----------	---------------------	--------	--------------	--------

AIR SPARGING SYSTEM MONITORING

COMPLIANCE

POINT NUMBER	Flow (scfm)	Pressure (psi)	Cycle On	Cycle Off	Cycle On	Cycle Off	DO NOT OPERATE VES UNLESS CONDITIONS ARE SATISFIED
1 AS-1			12:00 AM	2:20 AM	2:00 PM	2:20 PM	Current Permit Posted? <input checked="" type="checkbox"/> Yes/No
2 AS-2			2:20 AM	4:40 AM	4:20 PM	4:40 PM	VES Flow Rate <300 SCFM? <input checked="" type="checkbox"/> Yes/No
3 AS-3			4:40 AM	7:00 AM	6:40 PM	7:00 PM	Temperature >1500 °F? <input checked="" type="checkbox"/> Yes/No
4 AS-4			7:00 AM	9:20 AM	9:00 PM	9:20 PM	Effluent VOC <50 ppmv (as Hex)? <input checked="" type="checkbox"/> Yes/No
5 AS-5			9:20 AM	11:40 AM	9:20 PM	11:40 PM	Copies of Logs On-Site? <input checked="" type="checkbox"/> Yes/No

MONTHLY CERTIFIED VAPOR SAMPLING

NOTE: Influent and Effluent Samples must be collected within 15 minutes of one another	Collect Sample	Sample Collected?	Sample Date	Sample Time	REQUIRED ANALYSIS AND SAMPLING CONTAINERS			EFFLUENT LIMITATIONS
					TPHg EPA 8015 Mod.	BTEX & Standard Oxygenates EPA 8260B	Benzene EPA 410A	
Influent	Monthly	YES/NO			1 Tedlar Bag			VOCs = 50 ppmv
Effluent	Monthly	YES/NO			1 Tedlar Bag		1 Tedlar Bag	Benzene = 0.24 ppmv
STATUS DEPARTURE:					Drums	empty		full

Notes: List all activities, observations, recommendations

SYSTEM WAS OFF UPON ARRIVAL. FLAME ROD ASSEMBLY GOT WET. RESTARTED SYSTEM DID OIM AND COLLECTED ALL DATA. SYSTEM WAS ON UPON DEPARTURE

All O&M activities must be conducted every seven days or sooner unless otherwise indicated by a "(Monthly)" note.

APPENDIX D

Laboratory Analytical Reports and Chain of Custody Documentation



LABORATORY REPORT

Prepared For: SECOR International, Inc.-Thousand Oaks
290 Conejo Ridge Avenue, Suite 200
Thousand Oaks, CA 91361
Attention: John Bollier

Project: ARCO 0031, South Gate

Sampled: 11/16/04-11/17/04

Received: 11/17/04

Issued: 12/03/04 16:48

NELAP #01108CA CA ELAP #1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: Results that fall between the MDL and RL are 'J' flagged.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID

INK1303-01
INK1303-02
INK1303-03
INK1303-04

CLIENT ID

MW-19
MW-20
FB-5110-20041116
TB-5110-20041116

MATRIX

Water
Water
Water
Water

Reviewed By:

Del Mar Analytical, Irvine
Wendy Kirkeeng
Project Manager



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
290 Conejo Ridge Avenue, Suite 200
Thousand Oaks, CA 91361
Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
Received: 11/17/04

VOLATILE FUEL HYDROCARBONS (EPA 5030/8015M)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-01 (MW-19 - Water)					Sampled: 11/17/04				
Reporting Units: ug/l									
GRO (C4 - C12)	EPA 8015B	4K24124	22	50	99	1	11/24/04	11/24/04	
Surrogate: 4-BFB (FID) (60-135%)					97 %				
Sample ID: INK1303-02 (MW-20 - Water)					Sampled: 11/16/04				
Reporting Units: ug/l									
GRO (C4 - C12)	EPA 8015B	4K24124	220	500	4600	10	11/24/04	11/24/04	
Surrogate: 4-BFB (FID) (60-135%)					94 %				
Sample ID: INK1303-03 (FB-5110-20041116 - Water)					Sampled: 11/16/04				
Reporting Units: ug/l									
GRO (C4 - C12)	EPA 8015B	4K24124	22	50	ND	1	11/24/04	11/25/04	
Surrogate: 4-BFB (FID) (60-135%)					95 %				
Sample ID: INK1303-04 (TB-5110-20041116 - Water)					Sampled: 11/16/04				
Reporting Units: ug/l									
GRO (C4 - C12)	EPA 8015B	4K24124	22	50	ND	1	11/24/04	11/25/04	
Surrogate: 4-BFB (FID) (60-135%)					94 %				

Del Mar Analytical, Irvine
Wendy Kirkeeng
Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced,
except in full, without written permission from Del Mar Analytical.

INK1303 <Page 2 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-01 (MW-19 - Water)					Sampled: 11/17/04				
Reporting Units: ug/l									
Acetone	EPA 8260B	4K28012	4.5	10	9.7	1	11/28/04	11/28/04	J,DX
2-Butanone (MEK)	EPA 8260B	4K28012	3.8	10	ND	1	11/28/04	11/28/04	
2-Hexanone	EPA 8260B	4K28012	2.6	10	ND	1	11/28/04	11/28/04	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	4K28012	2.5	10	ND	1	11/28/04	11/28/04	
Surrogate: Dibromofluoromethane (80-120%)					103 %				
Surrogate: Toluene-d8 (80-120%)					106 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					94 %				
Sample ID: INK1303-02 (MW-20 - Water)					Sampled: 11/16/04				
Reporting Units: ug/l									
Acetone	EPA 8260B	4K27009	22	50	ND	5	11/27/04	11/27/04	
2-Butanone (MEK)	EPA 8260B	4K27009	19	50	ND	5	11/27/04	11/27/04	
2-Hexanone	EPA 8260B	4K27009	13	50	ND	5	11/27/04	11/27/04	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	4K27009	12	50	ND	5	11/27/04	11/27/04	
Surrogate: Dibromofluoromethane (80-120%)					107 %				
Surrogate: Toluene-d8 (80-120%)					110 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					95 %				
Sample ID: INK1303-03 (FB-5110-20041116 - Water)					Sampled: 11/16/04				
Reporting Units: ug/l									
Acetone	EPA 8260B	4K27009	4.5	10	5.3	1	11/27/04	11/27/04	J,DX
2-Butanone (MEK)	EPA 8260B	4K27009	3.8	10	6.5	1	11/27/04	11/27/04	J,DX
2-Hexanone	EPA 8260B	4K27009	2.6	10	ND	1	11/27/04	11/27/04	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	4K27009	2.5	10	ND	1	11/27/04	11/27/04	
Surrogate: Dibromofluoromethane (80-120%)					105 %				
Surrogate: Toluene-d8 (80-120%)					108 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					98 %				

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 3 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
290 Conejo Ridge Avenue, Suite 200
Thousand Oaks, CA 91361
Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
Received: 11/17/04

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-04 (TB-5110-20041116 - Water)					Sampled: 11/16/04				
Reporting Units: ug/l									
Acetone	EPA 8260B	4K27009	4.5	10	ND	1	11/27/04	11/27/04	
2-Butanone (MEK)	EPA 8260B	4K27009	3.8	10	ND	1	11/27/04	11/27/04	
2-Hexanone	EPA 8260B	4K27009	2.6	10	ND	1	11/27/04	11/27/04	
4-Methyl-2-pentanone (MIBK)	EPA 8260B	4K27009	2.5	10	ND	1	11/27/04	11/27/04	
Surrogate: Dibromofluoromethane (80-120%)					103 %				
Surrogate: Toluene-d8 (80-120%)					107 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					98 %				

Del Mar Analytical, Irvine
Wendy Kirkeeng
Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced,
except in full, without written permission from Del Mar Analytical.

INK1303 <Page 4 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-01 (MW-19 - Water)					Sampled: 11/17/04				
Reporting Units: ug/l									
Benzene	EPA 8260B	4K28012	0.28	2.0	6.4	1	11/28/04	11/28/04	
Bromobenzene	EPA 8260B	4K28012	0.27	5.0	ND	1	11/28/04	11/28/04	
Bromochloromethane	EPA 8260B	4K28012	0.32	5.0	ND	1	11/28/04	11/28/04	
Bromodichloromethane	EPA 8260B	4K28012	0.30	2.0	ND	1	11/28/04	11/28/04	
Bromoform	EPA 8260B	4K28012	0.32	5.0	ND	1	11/28/04	11/28/04	
Bromomethane	EPA 8260B	4K28012	0.34	5.0	ND	1	11/28/04	11/28/04	
n-Butylbenzene	EPA 8260B	4K28012	0.37	5.0	ND	1	11/28/04	11/28/04	
sec-Butylbenzene	EPA 8260B	4K28012	0.25	5.0	ND	1	11/28/04	11/28/04	
tert-Butylbenzene	EPA 8260B	4K28012	0.22	5.0	ND	1	11/28/04	11/28/04	
Carbon tetrachloride	EPA 8260B	4K28012	0.28	5.0	ND	1	11/28/04	11/28/04	
Chlorobenzene	EPA 8260B	4K28012	0.36	2.0	ND	1	11/28/04	11/28/04	
Chloroethane	EPA 8260B	4K28012	0.33	5.0	ND	1	11/28/04	11/28/04	
Chloroform	EPA 8260B	4K28012	0.33	2.0	ND	1	11/28/04	11/28/04	
Chloromethane	EPA 8260B	4K28012	0.30	5.0	ND	1	11/28/04	11/28/04	
2-Chlorotoluene	EPA 8260B	4K28012	0.28	5.0	ND	1	11/28/04	11/28/04	
4-Chlorotoluene	EPA 8260B	4K28012	0.29	5.0	ND	1	11/28/04	11/28/04	
Dibromochloromethane	EPA 8260B	4K28012	0.28	2.0	ND	1	11/28/04	11/28/04	
1,2-Dibromo-3-chloropropane	EPA 8260B	4K28012	0.92	5.0	ND	1	11/28/04	11/28/04	
1,2-Dibromoethane (EDB)	EPA 8260B	4K28012	0.32	2.0	ND	1	11/28/04	11/28/04	
Dibromomethane	EPA 8260B	4K28012	0.36	2.0	ND	1	11/28/04	11/28/04	
1,2-Dichlorobenzene	EPA 8260B	4K28012	0.32	2.0	ND	1	11/28/04	11/28/04	
1,3-Dichlorobenzene	EPA 8260B	4K28012	0.35	2.0	ND	1	11/28/04	11/28/04	
1,4-Dichlorobenzene	EPA 8260B	4K28012	0.37	2.0	ND	1	11/28/04	11/28/04	
Dichlorodifluoromethane	EPA 8260B	4K28012	0.79	5.0	ND	1	11/28/04	11/28/04	
1,1-Dichloroethane	EPA 8260B	4K28012	0.27	2.0	ND	1	11/28/04	11/28/04	
1,2-Dichloroethane	EPA 8260B	4K28012	0.28	2.0	2.4	1	11/28/04	11/28/04	
1,1-Dichloroethene	EPA 8260B	4K28012	0.32	5.0	ND	1	11/28/04	11/28/04	
cis-1,2-Dichloroethene	EPA 8260B	4K28012	0.32	2.0	ND	1	11/28/04	11/28/04	
trans-1,2-Dichloroethene	EPA 8260B	4K28012	0.27	2.0	ND	1	11/28/04	11/28/04	
1,2-Dichloropropane	EPA 8260B	4K28012	0.35	2.0	ND	1	11/28/04	11/28/04	
1,3-Dichloropropane	EPA 8260B	4K28012	0.30	2.0	ND	1	11/28/04	11/28/04	
2,2-Dichloropropane	EPA 8260B	4K28012	0.29	2.0	ND	1	11/28/04	11/28/04	
1,1-Dichloropropene	EPA 8260B	4K28012	0.28	2.0	ND	1	11/28/04	11/28/04	
cis-1,3-Dichloropropene	EPA 8260B	4K28012	0.22	2.0	ND	1	11/28/04	11/28/04	
trans-1,3-Dichloropropene	EPA 8260B	4K28012	0.24	2.0	ND	1	11/28/04	11/28/04	
Ethylbenzene	EPA 8260B	4K28012	0.25	2.0	0.50	1	11/28/04	11/28/04	J,DX
Hexachlorobutadiene	EPA 8260B	4K28012	0.38	5.0	ND	1	11/28/04	11/28/04	
Isopropylbenzene	EPA 8260B	4K28012	0.25	2.0	0.69	1	11/28/04	11/28/04	J,DX
p-Isopropyltoluene	EPA 8260B	4K28012	0.28	2.0	ND	1	11/28/04	11/28/04	
Methylene chloride	EPA 8260B	4K28012	0.48	5.0	ND	1	11/28/04	11/28/04	
Naphthalene	EPA 8260B	4K28012	0.41	5.0	ND	1	11/28/04	11/28/04	

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 5 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-01 (MW-19 - Water) - cont.					Sampled: 11/17/04				
Reporting Units: ug/l									
n-Propylbenzene	EPA 8260B	4K28012	0.27	2.0	0.55	1	11/28/04	11/28/04	J,DX
Styrene	EPA 8260B	4K28012	0.16	2.0	ND	1	11/28/04	11/28/04	
1,1,1,2-Tetrachloroethane	EPA 8260B	4K28012	0.27	5.0	ND	1	11/28/04	11/28/04	
1,1,2,2-Tetrachloroethane	EPA 8260B	4K28012	0.24	2.0	ND	1	11/28/04	11/28/04	
Tetrachloroethene	EPA 8260B	4K28012	0.32	2.0	ND	1	11/28/04	11/28/04	
Toluene	EPA 8260B	4K28012	0.36	2.0	ND	1	11/28/04	11/28/04	
1,2,3-Trichlorobenzene	EPA 8260B	4K28012	0.45	5.0	ND	1	11/28/04	11/28/04	
1,2,4-Trichlorobenzene	EPA 8260B	4K28012	0.48	5.0	ND	1	11/28/04	11/28/04	
1,1,1-Trichloroethane	EPA 8260B	4K28012	0.30	2.0	ND	1	11/28/04	11/28/04	
1,1,2-Trichloroethane	EPA 8260B	4K28012	0.30	2.0	ND	1	11/28/04	11/28/04	
Trichloroethene	EPA 8260B	4K28012	0.26	2.0	ND	1	11/28/04	11/28/04	
Trichlorofluoromethane	EPA 8260B	4K28012	0.34	5.0	ND	1	11/28/04	11/28/04	
1,2,3-Trichloropropane	EPA 8260B	4K28012	0.85	10	ND	1	11/28/04	11/28/04	
1,2,4-Trimethylbenzene	EPA 8260B	4K28012	0.23	2.0	ND	1	11/28/04	11/28/04	
1,3,5-Trimethylbenzene	EPA 8260B	4K28012	0.26	2.0	ND	1	11/28/04	11/28/04	
Vinyl chloride	EPA 8260B	4K28012	0.26	5.0	ND	1	11/28/04	11/28/04	
o-Xylene	EPA 8260B	4K28012	0.24	2.0	ND	1	11/28/04	11/28/04	
m,p-Xylenes	EPA 8260B	4K28012	0.52	2.0	ND	1	11/28/04	11/28/04	
Xylenes, Total	EPA 8260B	4K28012	0.52	4.0	ND	1	11/28/04	11/28/04	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K28012	0.25	5.0	0.25	1	11/28/04	11/28/04	J,DX
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K28012	0.28	5.0	ND	1	11/28/04	11/28/04	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K28012	0.33	5.0	ND	1	11/28/04	11/28/04	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K28012	0.32	5.0	3.4	1	11/28/04	11/28/04	J,DX
tert-Butanol (TBA)	EPA 8260B	4K28012	3.1	50	22	1	11/28/04	11/28/04	J,DX
Ethanol	EPA 8260B	4K28012	100	150	ND	1	11/28/04	11/28/04	
Surrogate: Dibromofluoromethane (80-120%)					103 %				
Surrogate: Toluene-d8 (80-120%)					106 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					94 %				

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 6 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-02 (MW-20 - Water)					Sampled: 11/16/04				
Reporting Units: ug/l									
Benzene	EPA 8260B	4K27009	1.4	10	93	5	11/27/04	11/27/04	
Bromobenzene	EPA 8260B	4K27009	1.4	25	ND	5	11/27/04	11/27/04	
Bromochloromethane	EPA 8260B	4K27009	1.6	25	ND	5	11/27/04	11/27/04	
Bromodichloromethane	EPA 8260B	4K27009	1.5	10	ND	5	11/27/04	11/27/04	
Bromoform	EPA 8260B	4K27009	1.6	25	ND	5	11/27/04	11/27/04	
Bromomethane	EPA 8260B	4K27009	1.7	25	ND	5	11/27/04	11/27/04	
n-Butylbenzene	EPA 8260B	4K27009	1.8	25	ND	5	11/27/04	11/27/04	
sec-Butylbenzene	EPA 8260B	4K27009	1.2	25	ND	5	11/27/04	11/27/04	
tert-Butylbenzene	EPA 8260B	4K27009	1.1	25	ND	5	11/27/04	11/27/04	
Carbon tetrachloride	EPA 8260B	4K27009	1.4	25	ND	5	11/27/04	11/27/04	
Chlorobenzene	EPA 8260B	4K27009	1.8	10	ND	5	11/27/04	11/27/04	
Chloroethane	EPA 8260B	4K27009	1.6	25	ND	5	11/27/04	11/27/04	
Chloroform	EPA 8260B	4K27009	1.6	10	ND	5	11/27/04	11/27/04	
Chloromethane	EPA 8260B	4K27009	1.5	25	ND	5	11/27/04	11/27/04	
2-Chlorotoluene	EPA 8260B	4K27009	1.4	25	ND	5	11/27/04	11/27/04	
4-Chlorotoluene	EPA 8260B	4K27009	1.4	25	ND	5	11/27/04	11/27/04	
Dibromochloromethane	EPA 8260B	4K27009	1.4	10	ND	5	11/27/04	11/27/04	
1,2-Dibromo-3-chloropropane	EPA 8260B	4K27009	4.6	25	ND	5	11/27/04	11/27/04	
1,2-Dibromoethane (EDB)	EPA 8260B	4K27009	1.6	10	ND	5	11/27/04	11/27/04	
Dibromomethane	EPA 8260B	4K27009	1.8	10	ND	5	11/27/04	11/27/04	
1,2-Dichlorobenzene	EPA 8260B	4K27009	1.6	10	ND	5	11/27/04	11/27/04	
1,3-Dichlorobenzene	EPA 8260B	4K27009	1.8	10	ND	5	11/27/04	11/27/04	
1,4-Dichlorobenzene	EPA 8260B	4K27009	1.8	10	ND	5	11/27/04	11/27/04	
Dichlorodifluoromethane	EPA 8260B	4K27009	4.0	25	ND	5	11/27/04	11/27/04	
1,1-Dichloroethane	EPA 8260B	4K27009	1.4	10	ND	5	11/27/04	11/27/04	
1,2-Dichloroethane	EPA 8260B	4K27009	1.4	10	ND	5	11/27/04	11/27/04	
1,1-Dichloroethene	EPA 8260B	4K27009	1.6	25	ND	5	11/27/04	11/27/04	
cis-1,2-Dichloroethene	EPA 8260B	4K27009	1.6	10	ND	5	11/27/04	11/27/04	
trans-1,2-Dichloroethene	EPA 8260B	4K27009	1.4	10	ND	5	11/27/04	11/27/04	
1,2-Dichloropropane	EPA 8260B	4K27009	1.8	10	ND	5	11/27/04	11/27/04	
1,3-Dichloropropane	EPA 8260B	4K27009	1.5	10	ND	5	11/27/04	11/27/04	
2,2-Dichloropropane	EPA 8260B	4K27009	1.4	10	ND	5	11/27/04	11/27/04	
1,1-Dichloropropene	EPA 8260B	4K27009	1.4	10	ND	5	11/27/04	11/27/04	
cis-1,3-Dichloropropene	EPA 8260B	4K27009	1.1	10	ND	5	11/27/04	11/27/04	
trans-1,3-Dichloropropene	EPA 8260B	4K27009	1.2	10	ND	5	11/27/04	11/27/04	
Ethylbenzene	EPA 8260B	4K27009	1.2	10	36	5	11/27/04	11/27/04	
Hexachlorobutadiene	EPA 8260B	4K27009	1.9	25	ND	5	11/27/04	11/27/04	
Isopropylbenzene	EPA 8260B	4K27009	1.2	10	2.6	5	11/27/04	11/27/04	J,DX
p-Isopropyltoluene	EPA 8260B	4K27009	1.4	10	ND	5	11/27/04	11/27/04	
Methylene chloride	EPA 8260B	4K27009	2.4	25	ND	5	11/27/04	11/27/04	
Naphthalene	EPA 8260B	4K27009	2.0	25	2.7	5	11/27/04	11/27/04	J,DX

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 7 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-02 (MW-20 - Water) - cont.					Sampled: 11/16/04				
Reporting Units: ug/l									
n-Propylbenzene	EPA 8260B	4K27009	1.4	10	6.2	5	11/27/04	11/27/04	J,DX
Styrene	EPA 8260B	4K27009	0.80	10	ND	5	11/27/04	11/27/04	
1,1,1,2-Tetrachloroethane	EPA 8260B	4K27009	1.4	25	ND	5	11/27/04	11/27/04	
1,1,2,2-Tetrachloroethane	EPA 8260B	4K27009	1.2	10	ND	5	11/27/04	11/27/04	
Tetrachloroethene	EPA 8260B	4K27009	1.6	10	ND	5	11/27/04	11/27/04	
Toluene	EPA 8260B	4K27009	1.8	10	ND	5	11/27/04	11/27/04	
1,2,3-Trichlorobenzene	EPA 8260B	4K27009	2.2	25	ND	5	11/27/04	11/27/04	
1,2,4-Trichlorobenzene	EPA 8260B	4K27009	2.4	25	ND	5	11/27/04	11/27/04	
1,1,1-Trichloroethane	EPA 8260B	4K27009	1.5	10	ND	5	11/27/04	11/27/04	
1,1,2-Trichloroethane	EPA 8260B	4K27009	1.5	10	ND	5	11/27/04	11/27/04	
Trichloroethene	EPA 8260B	4K27009	1.3	10	ND	5	11/27/04	11/27/04	
Trichlorofluoromethane	EPA 8260B	4K27009	1.7	25	ND	5	11/27/04	11/27/04	
1,2,3-Trichloropropane	EPA 8260B	4K27009	4.2	50	ND	5	11/27/04	11/27/04	
1,2,4-Trimethylbenzene	EPA 8260B	4K27009	1.2	10	ND	5	11/27/04	11/27/04	
1,3,5-Trimethylbenzene	EPA 8260B	4K27009	1.3	10	ND	5	11/27/04	11/27/04	
Vinyl chloride	EPA 8260B	4K27009	1.3	25	ND	5	11/27/04	11/27/04	
o-Xylene	EPA 8260B	4K27009	1.2	10	ND	5	11/27/04	11/27/04	
m,p-Xylenes	EPA 8260B	4K27009	2.6	10	5.8	5	11/27/04	11/27/04	J,DX
Xylenes, Total	EPA 8260B	4K27009	2.6	20	5.8	5	11/27/04	11/27/04	J,DX
Di-isopropyl Ether (DIPE)	EPA 8260B	4K27009	1.2	25	ND	5	11/27/04	11/27/04	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K27009	1.4	25	ND	5	11/27/04	11/27/04	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K27009	1.6	25	2.5	5	11/27/04	11/27/04	J,DX
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K27009	1.6	25	340	5	11/27/04	11/27/04	
tert-Butanol (TBA)	EPA 8260B	4K27009	16	250	61	5	11/27/04	11/27/04	J,DX
Ethanol	EPA 8260B	4K27009	500	750	ND	5	11/27/04	11/27/04	
Surrogate: Dibromofluoromethane (80-120%)					107 %				
Surrogate: Toluene-d8 (80-120%)					110 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					95 %				

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 8 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-03 (FB-5110-20041116 - Water)					Sampled: 11/16/04				
Reporting Units: ug/l									
Benzene	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
Bromobenzene	EPA 8260B	4K27009	0.27	5.0	ND	1	11/27/04	11/27/04	
Bromochloromethane	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04	
Bromodichloromethane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04	
Bromoform	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04	
Bromomethane	EPA 8260B	4K27009	0.34	5.0	ND	1	11/27/04	11/27/04	
n-Butylbenzene	EPA 8260B	4K27009	0.37	5.0	ND	1	11/27/04	11/27/04	
sec-Butylbenzene	EPA 8260B	4K27009	0.25	5.0	ND	1	11/27/04	11/27/04	
tert-Butylbenzene	EPA 8260B	4K27009	0.22	5.0	ND	1	11/27/04	11/27/04	
Carbon tetrachloride	EPA 8260B	4K27009	0.28	5.0	ND	1	11/27/04	11/27/04	
Chlorobenzene	EPA 8260B	4K27009	0.36	2.0	ND	1	11/27/04	11/27/04	
Chloroethane	EPA 8260B	4K27009	0.33	5.0	ND	1	11/27/04	11/27/04	
Chloroform	EPA 8260B	4K27009	0.33	2.0	0.36	1	11/27/04	11/27/04	J,DX
Chloromethane	EPA 8260B	4K27009	0.30	5.0	ND	1	11/27/04	11/27/04	
2-Chlorotoluene	EPA 8260B	4K27009	0.28	5.0	ND	1	11/27/04	11/27/04	
4-Chlorotoluene	EPA 8260B	4K27009	0.29	5.0	ND	1	11/27/04	11/27/04	
Dibromochloromethane	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
1,2-Dibromo-3-chloropropane	EPA 8260B	4K27009	0.92	5.0	ND	1	11/27/04	11/27/04	
1,2-Dibromoethane (EDB)	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04	
Dibromomethane	EPA 8260B	4K27009	0.36	2.0	ND	1	11/27/04	11/27/04	
1,2-Dichlorobenzene	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04	
1,3-Dichlorobenzene	EPA 8260B	4K27009	0.35	2.0	ND	1	11/27/04	11/27/04	
1,4-Dichlorobenzene	EPA 8260B	4K27009	0.37	2.0	ND	1	11/27/04	11/27/04	
Dichlorodifluoromethane	EPA 8260B	4K27009	0.79	5.0	ND	1	11/27/04	11/27/04	
1,1-Dichloroethane	EPA 8260B	4K27009	0.27	2.0	ND	1	11/27/04	11/27/04	
1,2-Dichloroethane	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
1,1-Dichloroethene	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04	
cis-1,2-Dichloroethene	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04	
trans-1,2-Dichloroethene	EPA 8260B	4K27009	0.27	2.0	ND	1	11/27/04	11/27/04	
1,2-Dichloropropane	EPA 8260B	4K27009	0.35	2.0	ND	1	11/27/04	11/27/04	
1,3-Dichloropropane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04	
2,2-Dichloropropane	EPA 8260B	4K27009	0.29	2.0	ND	1	11/27/04	11/27/04	
1,1-Dichloropropene	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
cis-1,3-Dichloropropene	EPA 8260B	4K27009	0.22	2.0	ND	1	11/27/04	11/27/04	
trans-1,3-Dichloropropene	EPA 8260B	4K27009	0.24	2.0	ND	1	11/27/04	11/27/04	
Ethylbenzene	EPA 8260B	4K27009	0.25	2.0	ND	1	11/27/04	11/27/04	
Hexachlorobutadiene	EPA 8260B	4K27009	0.38	5.0	ND	1	11/27/04	11/27/04	
Isopropylbenzene	EPA 8260B	4K27009	0.25	2.0	ND	1	11/27/04	11/27/04	
p-Isopropyltoluene	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
Methylene chloride	EPA 8260B	4K27009	0.48	5.0	ND	1	11/27/04	11/27/04	
Naphthalene	EPA 8260B	4K27009	0.41	5.0	ND	1	11/27/04	11/27/04	

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 9 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04

Received: 11/17/04

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-03 (FB-5110-20041116 - Water) - cont.					Sampled: 11/16/04				
Reporting Units: ug/l									
n-Propylbenzene	EPA 8260B	4K27009	0.27	2.0	ND	1	11/27/04	11/27/04	
Styrene	EPA 8260B	4K27009	0.16	2.0	ND	1	11/27/04	11/27/04	
1,1,1,2-Tetrachloroethane	EPA 8260B	4K27009	0.27	5.0	ND	1	11/27/04	11/27/04	
1,1,2,2-Tetrachloroethane	EPA 8260B	4K27009	0.24	2.0	ND	1	11/27/04	11/27/04	
Tetrachloroethene	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04	
Toluene	EPA 8260B	4K27009	0.36	2.0	ND	1	11/27/04	11/27/04	
1,2,3-Trichlorobenzene	EPA 8260B	4K27009	0.45	5.0	ND	1	11/27/04	11/27/04	
1,2,4-Trichlorobenzene	EPA 8260B	4K27009	0.48	5.0	ND	1	11/27/04	11/27/04	
1,1,1-Trichloroethane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04	
1,1,2-Trichloroethane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04	
Trichloroethene	EPA 8260B	4K27009	0.26	2.0	ND	1	11/27/04	11/27/04	
Trichlorofluoromethane	EPA 8260B	4K27009	0.34	5.0	ND	1	11/27/04	11/27/04	
1,2,3-Trichloropropane	EPA 8260B	4K27009	0.85	10	ND	1	11/27/04	11/27/04	
1,2,4-Trimethylbenzene	EPA 8260B	4K27009	0.23	2.0	ND	1	11/27/04	11/27/04	
1,3,5-Trimethylbenzene	EPA 8260B	4K27009	0.26	2.0	ND	1	11/27/04	11/27/04	
Vinyl chloride	EPA 8260B	4K27009	0.26	5.0	ND	1	11/27/04	11/27/04	
o-Xylene	EPA 8260B	4K27009	0.24	2.0	ND	1	11/27/04	11/27/04	
m,p-Xylenes	EPA 8260B	4K27009	0.52	2.0	ND	1	11/27/04	11/27/04	
Xylenes, Total	EPA 8260B	4K27009	0.52	4.0	ND	1	11/27/04	11/27/04	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K27009	0.25	5.0	ND	1	11/27/04	11/27/04	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K27009	0.28	5.0	ND	1	11/27/04	11/27/04	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K27009	0.33	5.0	ND	1	11/27/04	11/27/04	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04	
tert-Butanol (TBA)	EPA 8260B	4K27009	3.1	50	ND	1	11/27/04	11/27/04	
Ethanol	EPA 8260B	4K27009	100	150	ND	1	11/27/04	11/27/04	
Surrogate: Dibromofluoromethane (80-120%)					105 %				
Surrogate: Toluene-d8 (80-120%)					108 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					98 %				

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 10 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-04 (TB-5110-20041116 - Water)					Sampled: 11/16/04				
Reporting Units: ug/l									
Benzene	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
Bromobenzene	EPA 8260B	4K27009	0.27	5.0	ND	1	11/27/04	11/27/04	
Bromochloromethane	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04	
Bromodichloromethane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04	
Bromoform	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04	
Bromomethane	EPA 8260B	4K27009	0.34	5.0	ND	1	11/27/04	11/27/04	
n-Butylbenzene	EPA 8260B	4K27009	0.37	5.0	ND	1	11/27/04	11/27/04	
sec-Butylbenzene	EPA 8260B	4K27009	0.25	5.0	ND	1	11/27/04	11/27/04	
tert-Butylbenzene	EPA 8260B	4K27009	0.22	5.0	ND	1	11/27/04	11/27/04	
Carbon tetrachloride	EPA 8260B	4K27009	0.28	5.0	ND	1	11/27/04	11/27/04	
Chlorobenzene	EPA 8260B	4K27009	0.36	2.0	ND	1	11/27/04	11/27/04	
Chloroethane	EPA 8260B	4K27009	0.33	5.0	ND	1	11/27/04	11/27/04	
Chloroform	EPA 8260B	4K27009	0.33	2.0	ND	1	11/27/04	11/27/04	
Chloromethane	EPA 8260B	4K27009	0.30	5.0	ND	1	11/27/04	11/27/04	
2-Chlorotoluene	EPA 8260B	4K27009	0.28	5.0	ND	1	11/27/04	11/27/04	
4-Chlorotoluene	EPA 8260B	4K27009	0.29	5.0	ND	1	11/27/04	11/27/04	
Dibromochloromethane	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
1,2-Dibromo-3-chloropropane	EPA 8260B	4K27009	0.92	5.0	ND	1	11/27/04	11/27/04	
1,2-Dibromoethane (EDB)	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04	
Dibromomethane	EPA 8260B	4K27009	0.36	2.0	ND	1	11/27/04	11/27/04	
1,2-Dichlorobenzene	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04	
1,3-Dichlorobenzene	EPA 8260B	4K27009	0.35	2.0	ND	1	11/27/04	11/27/04	
1,4-Dichlorobenzene	EPA 8260B	4K27009	0.37	2.0	ND	1	11/27/04	11/27/04	
Dichlorodifluoromethane	EPA 8260B	4K27009	0.79	5.0	ND	1	11/27/04	11/27/04	
1,1-Dichloroethane	EPA 8260B	4K27009	0.27	2.0	ND	1	11/27/04	11/27/04	
1,2-Dichloroethane	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
1,1-Dichloroethene	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04	
cis-1,2-Dichloroethene	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04	
trans-1,2-Dichloroethene	EPA 8260B	4K27009	0.27	2.0	ND	1	11/27/04	11/27/04	
1,2-Dichloropropane	EPA 8260B	4K27009	0.35	2.0	ND	1	11/27/04	11/27/04	
1,3-Dichloropropane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04	
2,2-Dichloropropane	EPA 8260B	4K27009	0.29	2.0	ND	1	11/27/04	11/27/04	
1,1-Dichloropropene	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
cis-1,3-Dichloropropene	EPA 8260B	4K27009	0.22	2.0	ND	1	11/27/04	11/27/04	
trans-1,3-Dichloropropene	EPA 8260B	4K27009	0.24	2.0	ND	1	11/27/04	11/27/04	
Ethylbenzene	EPA 8260B	4K27009	0.25	2.0	ND	1	11/27/04	11/27/04	
Hexachlorobutadiene	EPA 8260B	4K27009	0.38	5.0	ND	1	11/27/04	11/27/04	
Isopropylbenzene	EPA 8260B	4K27009	0.25	2.0	ND	1	11/27/04	11/27/04	
p-Isopropyltoluene	EPA 8260B	4K27009	0.28	2.0	ND	1	11/27/04	11/27/04	
Methylene chloride	EPA 8260B	4K27009	0.48	5.0	ND	1	11/27/04	11/27/04	
Naphthalene	EPA 8260B	4K27009	0.41	5.0	ND	1	11/27/04	11/27/04	

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 11 of 33>



SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1303-04 (TB-5110-20041116 - Water) - cont.					Sampled: 11/16/04				
Reporting Units: ug/l									
n-Propylbenzene	EPA 8260B	4K27009	0.27	2.0	ND	1	11/27/04	11/27/04	
Styrene	EPA 8260B	4K27009	0.16	2.0	ND	1	11/27/04	11/27/04	
1,1,1,2-Tetrachloroethane	EPA 8260B	4K27009	0.27	5.0	ND	1	11/27/04	11/27/04	
1,1,2,2-Tetrachloroethane	EPA 8260B	4K27009	0.24	2.0	ND	1	11/27/04	11/27/04	
Tetrachloroethene	EPA 8260B	4K27009	0.32	2.0	ND	1	11/27/04	11/27/04	
Toluene	EPA 8260B	4K27009	0.36	2.0	ND	1	11/27/04	11/27/04	
1,2,3-Trichlorobenzene	EPA 8260B	4K27009	0.45	5.0	ND	1	11/27/04	11/27/04	
1,2,4-Trichlorobenzene	EPA 8260B	4K27009	0.48	5.0	ND	1	11/27/04	11/27/04	
1,1,1-Trichloroethane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04	
1,1,2-Trichloroethane	EPA 8260B	4K27009	0.30	2.0	ND	1	11/27/04	11/27/04	
Trichloroethene	EPA 8260B	4K27009	0.26	2.0	ND	1	11/27/04	11/27/04	
Trichlorofluoromethane	EPA 8260B	4K27009	0.34	5.0	ND	1	11/27/04	11/27/04	
1,2,3-Trichloropropane	EPA 8260B	4K27009	0.85	10	ND	1	11/27/04	11/27/04	
1,2,4-Trimethylbenzene	EPA 8260B	4K27009	0.23	2.0	ND	1	11/27/04	11/27/04	
1,3,5-Trimethylbenzene	EPA 8260B	4K27009	0.26	2.0	ND	1	11/27/04	11/27/04	
Vinyl chloride	EPA 8260B	4K27009	0.26	5.0	ND	1	11/27/04	11/27/04	
o-Xylene	EPA 8260B	4K27009	0.24	2.0	ND	1	11/27/04	11/27/04	
m,p-Xylenes	EPA 8260B	4K27009	0.52	2.0	ND	1	11/27/04	11/27/04	
Xylenes, Total	EPA 8260B	4K27009	0.52	4.0	ND	1	11/27/04	11/27/04	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K27009	0.25	5.0	ND	1	11/27/04	11/27/04	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K27009	0.28	5.0	ND	1	11/27/04	11/27/04	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K27009	0.33	5.0	ND	1	11/27/04	11/27/04	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K27009	0.32	5.0	ND	1	11/27/04	11/27/04	
tert-Butanol (TBA)	EPA 8260B	4K27009	3.1	50	ND	1	11/27/04	11/27/04	
Ethanol	EPA 8260B	4K27009	100	150	ND	1	11/27/04	11/27/04	
Surrogate: Dibromofluoromethane (80-120%)					103 %				
Surrogate: Toluene-d8 (80-120%)					107 %				
Surrogate: 4-Bromofluorobenzene (80-120%)					98 %				

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE FUEL HYDROCARBONS (EPA 5030/8015M)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K24124 Extracted: 11/24/04										
Blank Analyzed: 11/24/04 (4K24124-BLK1)										
GRO (C4 - C12)	ND	50	22	ug/l						
Surrogate: 4-BFB (FID)	9.72			ug/l	10.0		97	60-135		
LCS Analyzed: 11/24/04 (4K24124-BS1)										
GRO (C4 - C12)	242	50	22	ug/l	220		110	70-135		
Surrogate: 4-BFB (FID)	11.5			ug/l	10.0		115	60-135		
Matrix Spike Analyzed: 11/24/04 (4K24124-MS1)										
GRO (C4 - C12)	242	50	22	ug/l	220	ND	110	60-135		
Surrogate: 4-BFB (FID)	11.5			ug/l	10.0		115	60-135		
Matrix Spike Dup Analyzed: 11/24/04 (4K24124-MSD1)										
GRO (C4 - C12)	239	50	22	ug/l	220	ND	109	60-135	1	20
Surrogate: 4-BFB (FID)	11.0			ug/l	10.0		110	60-135		

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced,
 except in full, without written permission from Del Mar Analytical.

INK1303 <Page 13 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K27009 Extracted: 11/27/04										
Blank Analyzed: 11/27/04 (4K27009-BLK1)										
Acetone	ND	10	4.5	ug/l						
2-Butanone (MEK)	ND	10	3.8	ug/l						
2-Hexanone	ND	10	2.6	ug/l						
4-Methyl-2-pentanone (MIBK)	ND	10	2.5	ug/l						
Surrogate: Dibromofluoromethane	25.6			ug/l	25.0		102 80-120			
Surrogate: Toluene-d8	26.9			ug/l	25.0		108 80-120			
Surrogate: 4-Bromofluorobenzene	24.2			ug/l	25.0		97 80-120			
LCS Analyzed: 11/27/04 (4K27009-BS1)										
Acetone	14.8	10	4.5	ug/l	25.0		59 30-140			
2-Butanone (MEK)	20.6	10	3.8	ug/l	25.0		82 40-135			
2-Hexanone	19.1	10	2.6	ug/l	25.0		76 40-140			
4-Methyl-2-pentanone (MIBK)	20.2	10	2.5	ug/l	25.0		81 40-140			
Surrogate: Dibromofluoromethane	25.3			ug/l	25.0		101 80-120			
Surrogate: Toluene-d8	26.2			ug/l	25.0		105 80-120			
Surrogate: 4-Bromofluorobenzene	23.7			ug/l	25.0		95 80-120			
Matrix Spike Analyzed: 11/27/04 (4K27009-MS1)					Source: INK1439-01					
Acetone	171	100	45	ug/l	250	ND	68 10-150			
2-Butanone (MEK)	244	100	38	ug/l	250	ND	98 30-145			
2-Hexanone	239	100	26	ug/l	250	ND	96 20-145			
4-Methyl-2-pentanone (MIBK)	240	100	25	ug/l	250	ND	96 40-145			
Surrogate: Dibromofluoromethane	264			ug/l	250		106 80-120			
Surrogate: Toluene-d8	272			ug/l	250		109 80-120			
Surrogate: 4-Bromofluorobenzene	244			ug/l	250		98 80-120			
Matrix Spike Dup Analyzed: 11/27/04 (4K27009-MSD1)					Source: INK1439-01					
Acetone	172	100	45	ug/l	250	ND	69 10-150	1	35	
2-Butanone (MEK)	243	100	38	ug/l	250	ND	97 30-145	0	40	
2-Hexanone	243	100	26	ug/l	250	ND	97 20-145	2	35	
4-Methyl-2-pentanone (MIBK)	243	100	25	ug/l	250	ND	97 40-145	1	35	
Surrogate: Dibromofluoromethane	263			ug/l	250		105 80-120			
Surrogate: Toluene-d8	271			ug/l	250		108 80-120			
Surrogate: 4-Bromofluorobenzene	244			ug/l	250		98 80-120			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 14 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS by GC/MS (EPA 5030B/8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K28012 Extracted: 11/28/04										
Blank Analyzed: 11/28/04 (4K28012-BLK1)										
Acetone	ND	10	4.5	ug/l						
2-Butanone (MEK)	ND	10	3.8	ug/l						
2-Hexanone	ND	10	2.6	ug/l						
4-Methyl-2-pentanone (MIBK)	ND	10	2.5	ug/l						
Surrogate: Dibromofluoromethane	26.8			ug/l	25.0		107 80-120			
Surrogate: Toluene-d8	26.8			ug/l	25.0		107 80-120			
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0		98 80-120			
LCS Analyzed: 11/28/04 (4K28012-BS1)										
Acetone	17.2	10	4.5	ug/l	25.0		69 30-140			
2-Butanone (MEK)	24.0	10	3.8	ug/l	25.0		96 40-135			
2-Hexanone	21.6	10	2.6	ug/l	25.0		86 40-140			
4-Methyl-2-pentanone (MIBK)	22.9	10	2.5	ug/l	25.0		92 40-140			
Surrogate: Dibromofluoromethane	26.6			ug/l	25.0		106 80-120			
Surrogate: Toluene-d8	27.0			ug/l	25.0		108 80-120			
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0		98 80-120			
Matrix Spike Analyzed: 11/28/04 (4K28012-MS1)										
					Source: INK1387-04					
Acetone	21.6	10	4.5	ug/l	25.0	ND	86 10-150			
2-Butanone (MEK)	30.1	10	3.8	ug/l	25.0	ND	120 30-145			
2-Hexanone	28.7	10	2.6	ug/l	25.0	ND	115 20-145			
4-Methyl-2-pentanone (MIBK)	29.3	10	2.5	ug/l	25.0	ND	117 40-145			
Surrogate: Dibromofluoromethane	26.4			ug/l	25.0		106 80-120			
Surrogate: Toluene-d8	26.3			ug/l	25.0		105 80-120			
Surrogate: 4-Bromofluorobenzene	23.7			ug/l	25.0		95 80-120			
Matrix Spike Dup Analyzed: 11/28/04 (4K28012-MSD1)										
					Source: INK1387-04					
Acetone	22.9	10	4.5	ug/l	25.0	ND	92 10-150	6	35	
2-Butanone (MEK)	32.2	10	3.8	ug/l	25.0	ND	129 30-145	7	40	
2-Hexanone	30.9	10	2.6	ug/l	25.0	ND	124 20-145	7	35	
4-Methyl-2-pentanone (MIBK)	31.8	10	2.5	ug/l	25.0	ND	127 40-145	8	35	
Surrogate: Dibromofluoromethane	26.3			ug/l	25.0		105 80-120			
Surrogate: Toluene-d8	26.4			ug/l	25.0		106 80-120			
Surrogate: 4-Bromofluorobenzene	24.0			ug/l	25.0		96 80-120			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 15 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K27009 Extracted: 11/27/04										
Blank Analyzed: 11/27/04 (4K27009-BLK1)										
Benzene	ND	2.0	0.28	ug/l						
Bromobenzene	ND	5.0	0.27	ug/l						
Bromochloromethane	ND	5.0	0.32	ug/l						
Bromodichloromethane	ND	2.0	0.30	ug/l						
Bromoform	ND	5.0	0.32	ug/l						
Bromomethane	ND	5.0	0.34	ug/l						
n-Butylbenzene	ND	5.0	0.37	ug/l						
sec-Butylbenzene	ND	5.0	0.25	ug/l						
tert-Butylbenzene	ND	5.0	0.22	ug/l						
Carbon tetrachloride	ND	5.0	0.28	ug/l						
Chlorobenzene	ND	2.0	0.36	ug/l						
Chloroethane	ND	5.0	0.33	ug/l						
Chloroform	ND	2.0	0.33	ug/l						
Chloromethane	ND	5.0	0.30	ug/l						
2-Chlorotoluene	ND	5.0	0.28	ug/l						
4-Chlorotoluene	ND	5.0	0.29	ug/l						
Dibromochloromethane	ND	2.0	0.28	ug/l						
1,2-Dibromo-3-chloropropane	ND	5.0	0.92	ug/l						
1,2-Dibromoethane (EDB)	ND	2.0	0.32	ug/l						
Dibromomethane	ND	2.0	0.36	ug/l						
1,2-Dichlorobenzene	ND	2.0	0.32	ug/l						
1,3-Dichlorobenzene	ND	2.0	0.35	ug/l						
1,4-Dichlorobenzene	ND	2.0	0.37	ug/l						
Dichlorodifluoromethane	ND	5.0	0.79	ug/l						
1,1-Dichloroethane	ND	2.0	0.27	ug/l						
1,2-Dichloroethane	ND	2.0	0.28	ug/l						
1,1-Dichloroethene	ND	5.0	0.32	ug/l						
cis-1,2-Dichloroethene	ND	2.0	0.32	ug/l						
trans-1,2-Dichloroethene	ND	2.0	0.27	ug/l						
1,2-Dichloropropane	ND	2.0	0.35	ug/l						
1,3-Dichloropropane	ND	2.0	0.30	ug/l						
2,2-Dichloropropane	ND	2.0	0.29	ug/l						
1,1-Dichloropropene	ND	2.0	0.28	ug/l						
cis-1,3-Dichloropropene	ND	2.0	0.22	ug/l						
trans-1,3-Dichloropropene	ND	2.0	0.24	ug/l						

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 16 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K27009 Extracted: 11/27/04										
Blank Analyzed: 11/27/04 (4K27009-BLK1)										
Ethylbenzene	ND	2.0	0.25	ug/l						
Hexachlorobutadiene	ND	5.0	0.38	ug/l						
Isopropylbenzene	ND	2.0	0.25	ug/l						
p-Isopropyltoluene	ND	2.0	0.28	ug/l						
Methylene chloride	ND	5.0	0.48	ug/l						
Naphthalene	ND	5.0	0.41	ug/l						
n-Propylbenzene	ND	2.0	0.27	ug/l						
Styrene	ND	2.0	0.16	ug/l						
1,1,1,2-Tetrachloroethane	ND	5.0	0.27	ug/l						
1,1,2,2-Tetrachloroethane	ND	2.0	0.24	ug/l						
Tetrachloroethene	ND	2.0	0.32	ug/l						
Toluene	ND	2.0	0.36	ug/l						
1,2,3-Trichlorobenzene	ND	5.0	0.45	ug/l						
1,2,4-Trichlorobenzene	ND	5.0	0.48	ug/l						
1,1,1-Trichloroethane	ND	2.0	0.30	ug/l						
1,1,2-Trichloroethane	ND	2.0	0.30	ug/l						
Trichloroethene	ND	2.0	0.26	ug/l						
Trichlorofluoromethane	ND	5.0	0.34	ug/l						
1,2,3-Trichloropropane	ND	10	0.85	ug/l						
1,2,4-Trimethylbenzene	ND	2.0	0.23	ug/l						
1,3,5-Trimethylbenzene	ND	2.0	0.26	ug/l						
Vinyl chloride	ND	5.0	0.26	ug/l						
o-Xylene	ND	2.0	0.24	ug/l						
m,p-Xylenes	ND	2.0	0.52	ug/l						
Xylenes, Total	ND	4.0	0.52	ug/l						
Di-isopropyl Ether (DIPE)	ND	5.0	0.25	ug/l						
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	0.28	ug/l						
tert-Amyl Methyl Ether (TAME)	ND	5.0	0.33	ug/l						
Methyl-tert-butyl Ether (MTBE)	ND	5.0	0.32	ug/l						
tert-Butanol (TBA)	ND	50	3.1	ug/l						
Ethanol	ND	150	100	ug/l						
Surrogate: Dibromofluoromethane	25.6			ug/l	25.0		102		80-120	
Surrogate: Toluene-d8	26.9			ug/l	25.0		108		80-120	
Surrogate: 4-Bromofluorobenzene	24.2			ug/l	25.0		97		80-120	

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 17 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K27009 Extracted: 11/27/04										
LCS Analyzed: 11/27/04 (4K27009-BS1)										
Benzene	24.3	2.0	0.28	ug/l	25.0		97 70-120			
Bromobenzene	23.0	5.0	0.27	ug/l	25.0		92 80-120			
Bromochloromethane	23.9	5.0	0.32	ug/l	25.0		96 65-135			
Bromodichloromethane	24.1	2.0	0.30	ug/l	25.0		96 70-140			
Bromoform	20.3	5.0	0.32	ug/l	25.0		81 55-135			
Bromomethane	24.6	5.0	0.34	ug/l	25.0		98 60-140			
n-Butylbenzene	24.1	5.0	0.37	ug/l	25.0		96 75-130			
sec-Butylbenzene	24.7	5.0	0.25	ug/l	25.0		99 75-125			
tert-Butylbenzene	23.5	5.0	0.22	ug/l	25.0		94 75-125			
Carbon tetrachloride	23.6	5.0	0.28	ug/l	25.0		94 70-140			
Chlorobenzene	22.4	2.0	0.36	ug/l	25.0		90 80-125			
Chloroethane	23.8	5.0	0.33	ug/l	25.0		95 60-145			
Chloroform	23.9	2.0	0.33	ug/l	25.0		96 75-130			
Chloromethane	23.1	5.0	0.30	ug/l	25.0		92 40-145			
2-Chlorotoluene	23.4	5.0	0.28	ug/l	25.0		94 75-125			
4-Chlorotoluene	23.7	5.0	0.29	ug/l	25.0		95 75-125			
Dibromochloromethane	21.2	2.0	0.28	ug/l	25.0		85 65-145			
1,2-Dibromo-3-chloropropane	21.8	5.0	0.92	ug/l	25.0		87 50-135			
1,2-Dibromoethane (EDB)	23.8	2.0	0.32	ug/l	25.0		95 75-125			
Dibromomethane	22.3	2.0	0.36	ug/l	25.0		89 75-130			
1,2-Dichlorobenzene	22.8	2.0	0.32	ug/l	25.0		91 80-120			
1,3-Dichlorobenzene	22.3	2.0	0.35	ug/l	25.0		89 80-120			
1,4-Dichlorobenzene	22.5	2.0	0.37	ug/l	25.0		90 80-120			
Dichlorodifluoromethane	22.5	5.0	0.79	ug/l	25.0		90 10-160			
1,1-Dichloroethane	23.6	2.0	0.27	ug/l	25.0		94 70-135			
1,2-Dichloroethane	21.6	2.0	0.28	ug/l	25.0		86 60-150			
1,1-Dichloroethene	24.6	5.0	0.32	ug/l	25.0		98 75-135			
cis-1,2-Dichloroethene	23.4	2.0	0.32	ug/l	25.0		94 70-125			
trans-1,2-Dichloroethene	25.1	2.0	0.27	ug/l	25.0		100 70-130			
1,2-Dichloropropane	23.0	2.0	0.35	ug/l	25.0		92 70-120			
1,3-Dichloropropane	22.7	2.0	0.30	ug/l	25.0		91 70-130			
2,2-Dichloropropane	25.4	2.0	0.29	ug/l	25.0		102 65-150			
1,1-Dichloropropene	24.3	2.0	0.28	ug/l	25.0		97 75-130			
cis-1,3-Dichloropropene	24.0	2.0	0.22	ug/l	25.0		96 75-130			
trans-1,3-Dichloropropene	24.3	2.0	0.24	ug/l	25.0		97 75-135			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 18 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K27009 Extracted: 11/27/04										
LCS Analyzed: 11/27/04 (4K27009-BS1)										
Ethylbenzene	23.5	2.0	0.25	ug/l	25.0		94 80-120			
Hexachlorobutadiene	21.1	5.0	0.38	ug/l	25.0		84 65-140			
Isopropylbenzene	25.6	2.0	0.25	ug/l	25.0		102 75-125			
p-Isopropyltoluene	22.9	2.0	0.28	ug/l	25.0		92 75-125			
Methylene chloride	24.9	5.0	0.48	ug/l	25.0		100 60-135			
Naphthalene	21.5	5.0	0.41	ug/l	25.0		86 50-145			
n-Propylbenzene	24.5	2.0	0.27	ug/l	25.0		98 75-130			
Styrene	25.8	2.0	0.16	ug/l	25.0		103 80-135			
1,1,1,2-Tetrachloroethane	22.9	5.0	0.27	ug/l	25.0		92 70-145			
1,1,2,2-Tetrachloroethane	23.9	2.0	0.24	ug/l	25.0		96 60-135			
Tetrachloroethene	23.0	2.0	0.32	ug/l	25.0		92 75-125			
Toluene	22.4	2.0	0.36	ug/l	25.0		90 75-120			
1,2,3-Trichlorobenzene	22.1	5.0	0.45	ug/l	25.0		88 65-135			
1,2,4-Trichlorobenzene	22.9	5.0	0.48	ug/l	25.0		92 70-140			
1,1,1-Trichloroethane	23.7	2.0	0.30	ug/l	25.0		95 75-140			
1,1,2-Trichloroethane	22.3	2.0	0.30	ug/l	25.0		89 70-125			
Trichloroethene	22.5	2.0	0.26	ug/l	25.0		90 80-120			
Trichlorofluoromethane	25.4	5.0	0.34	ug/l	25.0		102 65-145			
1,2,3-Trichloropropane	22.1	10	0.85	ug/l	25.0		88 60-130			
1,2,4-Trimethylbenzene	24.9	2.0	0.23	ug/l	25.0		100 75-125			
1,3,5-Trimethylbenzene	25.6	2.0	0.26	ug/l	25.0		102 75-125			
Vinyl chloride	21.8	5.0	0.26	ug/l	25.0		87 50-130			
o-Xylene	23.6	2.0	0.24	ug/l	25.0		94 75-125			
m,p-Xylenes	49.0	2.0	0.52	ug/l	50.0		98 75-120			
Xylenes, Total	72.6	4.0	0.52	ug/l	75.0		97 75-125			
Di-isopropyl Ether (DIPE)	24.1	5.0	0.25	ug/l	25.0		96 65-135			
Ethyl tert-Butyl Ether (ETBE)	22.7	5.0	0.28	ug/l	25.0		91 60-140			
tert-Amyl Methyl Ether (TAME)	23.9	5.0	0.33	ug/l	25.0		96 60-140			
Methyl-tert-butyl Ether (MTBE)	23.0	5.0	0.32	ug/l	25.0		92 55-145			
tert-Butanol (TBA)	109	50	3.1	ug/l	125		87 70-140			
Ethanol	198	150	100	ug/l	250		79 35-165			
Surrogate: Dibromofluoromethane	25.3			ug/l	25.0		101 80-120			
Surrogate: Toluene-d8	26.2			ug/l	25.0		105 80-120			
Surrogate: 4-Bromofluorobenzene	23.7			ug/l	25.0		95 80-120			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 19 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K27009 Extracted: 11/27/04										
Matrix Spike Analyzed: 11/27/04 (4K27009-MS1)					Source: INK1439-01					
Benzene	263	20	2.8	ug/l	250	7.0	102	70-120		
Bromobenzene	235	50	2.7	ug/l	250	ND	94	65-130		
Bromochloromethane	251	50	3.2	ug/l	250	ND	100	65-140		
Bromodichloromethane	255	20	3.0	ug/l	250	ND	102	70-140		
Bromoform	217	50	3.2	ug/l	250	ND	87	55-140		
Bromomethane	246	50	3.4	ug/l	250	ND	98	50-145		
n-Butylbenzene	243	50	3.7	ug/l	250	ND	97	70-140		
sec-Butylbenzene	249	50	2.5	ug/l	250	ND	100	70-130		
tert-Butylbenzene	237	50	2.2	ug/l	250	ND	95	70-130		
Carbon tetrachloride	242	50	2.8	ug/l	250	ND	97	70-145		
Chlorobenzene	225	20	3.6	ug/l	250	ND	90	80-125		
Chloroethane	242	50	3.3	ug/l	250	ND	97	50-145		
Chloroform	249	20	3.3	ug/l	250	ND	100	70-135		
Chloromethane	237	50	3.0	ug/l	250	ND	95	35-145		
2-Chlorotoluene	236	50	2.8	ug/l	250	ND	94	70-140		
4-Chlorotoluene	242	50	2.9	ug/l	250	ND	97	70-140		
Dibromochloromethane	224	20	2.8	ug/l	250	ND	90	65-145		
1,2-Dibromo-3-chloropropane	257	50	9.2	ug/l	250	ND	103	45-155		
1,2-Dibromoethane (EDB)	257	20	3.2	ug/l	250	ND	103	70-130		
Dibromomethane	239	20	3.6	ug/l	250	ND	96	65-140		
1,2-Dichlorobenzene	227	20	3.2	ug/l	250	ND	91	75-130		
1,3-Dichlorobenzene	224	20	3.5	ug/l	250	ND	90	75-130		
1,4-Dichlorobenzene	226	20	3.7	ug/l	250	ND	90	80-120		
Dichlorodifluoromethane	233	50	7.9	ug/l	250	ND	93	10-160		
1,1-Dichloroethane	246	20	2.7	ug/l	250	ND	98	65-135		
1,2-Dichloroethane	279	20	2.8	ug/l	250	44	94	60-150		
1,1-Dichloroethene	256	50	3.2	ug/l	250	ND	102	65-140		
cis-1,2-Dichloroethene	240	20	3.2	ug/l	250	ND	96	65-130		
trans-1,2-Dichloroethene	256	20	2.7	ug/l	250	ND	102	65-135		
1,2-Dichloropropane	240	20	3.5	ug/l	250	ND	96	65-130		
1,3-Dichloropropane	242	20	3.0	ug/l	250	ND	97	65-140		
2,2-Dichloropropane	262	20	2.9	ug/l	250	ND	105	60-150		
1,1-Dichloropropene	253	20	2.8	ug/l	250	ND	101	65-140		
cis-1,3-Dichloropropene	255	20	2.2	ug/l	250	ND	102	70-140		
trans-1,3-Dichloropropene	259	20	2.4	ug/l	250	ND	104	70-140		

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 20 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K27009 Extracted: 11/27/04										
Matrix Spike Analyzed: 11/27/04 (4K27009-MS1)					Source: INK1439-01					
Ethylbenzene	248	20	2.5	ug/l	250	11	95	70-130		
Hexachlorobutadiene	205	50	3.8	ug/l	250	ND	82	65-140		
Isopropylbenzene	264	20	2.5	ug/l	250	ND	106	70-130		
p-Isopropyltoluene	230	20	2.8	ug/l	250	ND	92	70-130		
Methylene chloride	264	50	4.8	ug/l	250	ND	106	60-135		
Naphthalene	236	50	4.1	ug/l	250	6.5	92	50-150		
n-Propylbenzene	250	20	2.7	ug/l	250	2.9	99	70-135		
Styrene	258	20	1.6	ug/l	250	ND	103	55-145		
1,1,1,2-Tetrachloroethane	231	50	2.7	ug/l	250	ND	92	70-145		
1,1,2,2-Tetrachloroethane	269	20	2.4	ug/l	250	ND	108	60-145		
Tetrachloroethene	231	20	3.2	ug/l	250	ND	92	70-130		
Toluene	259	20	3.6	ug/l	250	26	93	70-120		
1,2,3-Trichlorobenzene	211	50	4.5	ug/l	250	ND	84	60-140		
1,2,4-Trichlorobenzene	218	50	4.8	ug/l	250	ND	87	60-140		
1,1,1-Trichloroethane	244	20	3.0	ug/l	250	ND	98	75-140		
1,1,2-Trichloroethane	248	20	3.0	ug/l	250	ND	99	60-135		
Trichloroethene	229	20	2.6	ug/l	250	ND	92	70-125		
Trichlorofluoromethane	264	50	3.4	ug/l	250	ND	106	55-145		
1,2,3-Trichloropropane	253	100	8.5	ug/l	250	ND	101	55-140		
1,2,4-Trimethylbenzene	276	20	2.3	ug/l	250	28	99	60-125		
1,3,5-Trimethylbenzene	261	20	2.6	ug/l	250	8.0	101	70-130		
Vinyl chloride	190	50	2.6	ug/l	250	ND	76	40-135		
o-Xylene	261	20	2.4	ug/l	250	24	95	65-125		
m,p-Xylenes	541	20	5.2	ug/l	500	49	98	65-130		
Xylenes, Total	802	40	5.2	ug/l	750	73	97	65-135		
Di-isopropyl Ether (DIPE)	266	50	2.5	ug/l	250	12	102	65-140		
Ethyl tert-Butyl Ether (ETBE)	244	50	2.8	ug/l	250	ND	98	60-140		
tert-Amyl Methyl Ether (TAME)	263	50	3.3	ug/l	250	ND	105	55-145		
Methyl-tert-butyl Ether (MTBE)	259	50	3.2	ug/l	250	ND	104	50-155		
tert-Butanol (TBA)	1250	500	31	ug/l	1250	150	88	65-145		
Ethanol	2010	1500	1000	ug/l	2500	ND	80	35-165		
Surrogate: Dibromofluoromethane	264			ug/l	250		106	80-120		
Surrogate: Toluene-d8	272			ug/l	250		109	80-120		
Surrogate: 4-Bromofluorobenzene	244			ug/l	250		98	80-120		

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 21 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K27009 Extracted: 11/27/04											
Matrix Spike Dup Analyzed: 11/27/04 (4K27009-MSD1)						Source: INK1439-01					
Benzene	260	20	2.8	ug/l	250	7.0	101	70-120	1	20	
Bromobenzene	235	50	2.7	ug/l	250	ND	94	65-130	0	20	
Bromochloromethane	252	50	3.2	ug/l	250	ND	101	65-140	0	25	
Bromodichloromethane	253	20	3.0	ug/l	250	ND	101	70-140	1	20	
Bromoform	221	50	3.2	ug/l	250	ND	88	55-140	2	25	
Bromomethane	255	50	3.4	ug/l	250	ND	102	50-145	4	25	
n-Butylbenzene	240	50	3.7	ug/l	250	ND	96	70-140	1	20	
sec-Butylbenzene	250	50	2.5	ug/l	250	ND	100	70-130	0	20	
tert-Butylbenzene	233	50	2.2	ug/l	250	ND	93	70-130	2	20	
Carbon tetrachloride	239	50	2.8	ug/l	250	ND	96	70-145	1	25	
Chlorobenzene	228	20	3.6	ug/l	250	ND	91	80-125	1	20	
Chloroethane	251	50	3.3	ug/l	250	ND	100	50-145	4	25	
Chloroform	253	20	3.3	ug/l	250	ND	101	70-135	2	20	
Chloromethane	234	50	3.0	ug/l	250	ND	94	35-145	1	25	
2-Chlorotoluene	236	50	2.8	ug/l	250	ND	94	70-140	0	20	
4-Chlorotoluene	240	50	2.9	ug/l	250	ND	96	70-140	1	20	
Dibromochloromethane	225	20	2.8	ug/l	250	ND	90	65-145	0	25	
1,2-Dibromo-3-chloropropane	264	50	9.2	ug/l	250	ND	106	45-155	3	30	
1,2-Dibromoethane (EDB)	259	20	3.2	ug/l	250	ND	104	70-130	1	25	
Dibromomethane	244	20	3.6	ug/l	250	ND	98	65-140	2	25	
1,2-Dichlorobenzene	229	20	3.2	ug/l	250	ND	92	75-130	1	20	
1,3-Dichlorobenzene	224	20	3.5	ug/l	250	ND	90	75-130	0	20	
1,4-Dichlorobenzene	227	20	3.7	ug/l	250	ND	91	80-120	0	20	
Dichlorodifluoromethane	227	50	7.9	ug/l	250	ND	91	10-160	3	30	
1,1-Dichloroethane	247	20	2.7	ug/l	250	ND	99	65-135	0	20	
1,2-Dichloroethane	280	20	2.8	ug/l	250	44	94	60-150	0	20	
1,1-Dichloroethene	254	50	3.2	ug/l	250	ND	102	65-140	1	20	
cis-1,2-Dichloroethene	244	20	3.2	ug/l	250	ND	98	65-130	2	20	
trans-1,2-Dichloroethene	259	20	2.7	ug/l	250	ND	104	65-135	1	20	
1,2-Dichloropropane	238	20	3.5	ug/l	250	ND	95	65-130	1	20	
1,3-Dichloropropane	241	20	3.0	ug/l	250	ND	96	65-140	0	25	
2,2-Dichloropropane	260	20	2.9	ug/l	250	ND	104	60-150	1	25	
1,1-Dichloropropene	251	20	2.8	ug/l	250	ND	100	65-140	1	20	
cis-1,3-Dichloropropene	251	20	2.2	ug/l	250	ND	100	70-140	2	20	
trans-1,3-Dichloropropene	258	20	2.4	ug/l	250	ND	103	70-140	0	25	

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 22 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K27009 Extracted: 11/27/04											
Matrix Spike Dup Analyzed: 11/27/04 (4K27009-MSD1)						Source: INK1439-01					
Ethylbenzene	250	20	2.5	ug/l	250	11	96	70-130	1	20	
Hexachlorobutadiene	206	50	3.8	ug/l	250	ND	82	65-140	1	20	
Isopropylbenzene	264	20	2.5	ug/l	250	ND	106	70-130	0	20	
p-Isopropyltoluene	230	20	2.8	ug/l	250	ND	92	70-130	0	20	
Methylene chloride	266	50	4.8	ug/l	250	ND	106	60-135	1	20	
Naphthalene	253	50	4.1	ug/l	250	6.5	99	50-150	7	30	
n-Propylbenzene	248	20	2.7	ug/l	250	2.9	98	70-135	1	20	
Styrene	262	20	1.6	ug/l	250	ND	105	55-145	2	30	
1,1,1,2-Tetrachloroethane	235	50	2.7	ug/l	250	ND	94	70-145	2	20	
1,1,2,2-Tetrachloroethane	272	20	2.4	ug/l	250	ND	109	60-145	1	30	
Tetrachloroethene	230	20	3.2	ug/l	250	ND	92	70-130	0	20	
Toluene	258	20	3.6	ug/l	250	26	93	70-120	0	20	
1,2,3-Trichlorobenzene	223	50	4.5	ug/l	250	ND	89	60-140	6	20	
1,2,4-Trichlorobenzene	224	50	4.8	ug/l	250	ND	90	60-140	3	20	
1,1,1-Trichloroethane	244	20	3.0	ug/l	250	ND	98	75-140	0	20	
1,1,2-Trichloroethane	250	20	3.0	ug/l	250	ND	100	60-135	1	25	
Trichloroethene	227	20	2.6	ug/l	250	ND	91	70-125	1	20	
Trichlorofluoromethane	262	50	3.4	ug/l	250	ND	105	55-145	1	25	
1,2,3-Trichloropropane	251	100	8.5	ug/l	250	ND	100	55-140	1	30	
1,2,4-Trimethylbenzene	275	20	2.3	ug/l	250	28	99	60-125	0	25	
1,3,5-Trimethylbenzene	263	20	2.6	ug/l	250	8.0	102	70-130	1	20	
Vinyl chloride	218	50	2.6	ug/l	250	ND	87	40-135	14	30	
o-Xylene	266	20	2.4	ug/l	250	24	97	65-125	2	20	
m,p-Xylenes	542	20	5.2	ug/l	500	49	99	65-130	0	25	
Xylenes, Total	808	40	5.2	ug/l	750	73	98	65-135	1	20	
Di-isopropyl Ether (DIPE)	269	50	2.5	ug/l	250	12	103	65-140	1	25	
Ethyl tert-Butyl Ether (ETBE)	246	50	2.8	ug/l	250	ND	98	60-140	1	25	
tert-Amyl Methyl Ether (TAME)	266	50	3.3	ug/l	250	ND	106	55-145	1	30	
Methyl-tert-butyl Ether (MTBE)	263	50	3.2	ug/l	250	ND	105	50-155	2	25	
tert-Butanol (TBA)	1240	500	31	ug/l	1250	150	87	65-145	1	25	
Ethanol	1960	1500	1000	ug/l	2500	ND	78	35-165	3	30	
Surrogate: Dibromofluoromethane	263			ug/l	250		105	80-120			
Surrogate: Toluene-d8	271			ug/l	250		108	80-120			
Surrogate: 4-Bromofluorobenzene	244			ug/l	250		98	80-120			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 23 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K28012 Extracted: 11/28/04										
Blank Analyzed: 11/28/04 (4K28012-BLK1)										
Benzene	ND	2.0	0.28	ug/l						
Bromobenzene	ND	5.0	0.27	ug/l						
Bromochloromethane	ND	5.0	0.32	ug/l						
Bromodichloromethane	ND	2.0	0.30	ug/l						
Bromoform	ND	5.0	0.32	ug/l						
Bromomethane	ND	5.0	0.34	ug/l						
n-Butylbenzene	ND	5.0	0.37	ug/l						
sec-Butylbenzene	ND	5.0	0.25	ug/l						
tert-Butylbenzene	ND	5.0	0.22	ug/l						
Carbon tetrachloride	ND	5.0	0.28	ug/l						
Chlorobenzene	ND	2.0	0.36	ug/l						
Chloroethane	ND	5.0	0.33	ug/l						
Chloroform	ND	2.0	0.33	ug/l						
Chloromethane	ND	5.0	0.30	ug/l						
2-Chlorotoluene	ND	5.0	0.28	ug/l						
4-Chlorotoluene	ND	5.0	0.29	ug/l						
Dibromochloromethane	ND	2.0	0.28	ug/l						
1,2-Dibromo-3-chloropropane	ND	5.0	0.92	ug/l						
1,2-Dibromoethane (EDB)	ND	2.0	0.32	ug/l						
Dibromomethane	ND	2.0	0.36	ug/l						
1,2-Dichlorobenzene	ND	2.0	0.32	ug/l						
1,3-Dichlorobenzene	ND	2.0	0.35	ug/l						
1,4-Dichlorobenzene	ND	2.0	0.37	ug/l						
Dichlorodifluoromethane	ND	5.0	0.79	ug/l						
1,1-Dichloroethane	ND	2.0	0.27	ug/l						
1,2-Dichloroethane	ND	2.0	0.28	ug/l						
1,1-Dichloroethene	ND	5.0	0.32	ug/l						
cis-1,2-Dichloroethene	ND	2.0	0.32	ug/l						
trans-1,2-Dichloroethene	ND	2.0	0.27	ug/l						
1,2-Dichloropropane	ND	2.0	0.35	ug/l						
1,3-Dichloropropane	ND	2.0	0.30	ug/l						
2,2-Dichloropropane	ND	2.0	0.29	ug/l						
1,1-Dichloropropene	ND	2.0	0.28	ug/l						
cis-1,3-Dichloropropene	ND	2.0	0.22	ug/l						
trans-1,3-Dichloropropene	ND	2.0	0.24	ug/l						

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 24 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K28012 Extracted: 11/28/04										
Blank Analyzed: 11/28/04 (4K28012-BLK1)										
Ethylbenzene	ND	2.0	0.25	ug/l						
Hexachlorobutadiene	ND	5.0	0.38	ug/l						
Isopropylbenzene	ND	2.0	0.25	ug/l						
p-Isopropyltoluene	ND	2.0	0.28	ug/l						
Methylene chloride	ND	5.0	0.48	ug/l						
Naphthalene	ND	5.0	0.41	ug/l						
n-Propylbenzene	ND	2.0	0.27	ug/l						
Styrene	ND	2.0	0.16	ug/l						
1,1,1,2-Tetrachloroethane	ND	5.0	0.27	ug/l						
1,1,2,2-Tetrachloroethane	ND	2.0	0.24	ug/l						
Tetrachloroethene	ND	2.0	0.32	ug/l						
Toluene	ND	2.0	0.36	ug/l						
1,2,3-Trichlorobenzene	ND	5.0	0.45	ug/l						
1,2,4-Trichlorobenzene	ND	5.0	0.48	ug/l						
1,1,1-Trichloroethane	ND	2.0	0.30	ug/l						
1,1,2-Trichloroethane	ND	2.0	0.30	ug/l						
Trichloroethene	ND	2.0	0.26	ug/l						
Trichlorofluoromethane	ND	5.0	0.34	ug/l						
1,2,3-Trichloropropane	ND	10	0.85	ug/l						
1,2,4-Trimethylbenzene	ND	2.0	0.23	ug/l						
1,3,5-Trimethylbenzene	ND	2.0	0.26	ug/l						
Vinyl chloride	ND	5.0	0.26	ug/l						
o-Xylene	ND	2.0	0.24	ug/l						
m,p-Xylenes	ND	2.0	0.52	ug/l						
Xylenes, Total	ND	4.0	0.52	ug/l						
Di-isopropyl Ether (DIPE)	ND	5.0	0.25	ug/l						
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	0.28	ug/l						
tert-Amyl Methyl Ether (TAME)	ND	5.0	0.33	ug/l						
Methyl-tert-butyl Ether (MTBE)	ND	5.0	0.32	ug/l						
tert-Butanol (TBA)	ND	50	3.1	ug/l						
Ethanol	ND	150	100	ug/l						
Surrogate: Dibromofluoromethane	26.8			ug/l	25.0		107	80-120		
Surrogate: Toluene-d8	26.8			ug/l	25.0		107	80-120		
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0		98	80-120		

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 25 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K28012 Extracted: 11/28/04										
LCS Analyzed: 11/28/04 (4K28012-BS1)										
Benzene	27.3	2.0	0.28	ug/l	25.0		109 70-120			
Bromobenzene	25.1	5.0	0.27	ug/l	25.0		100 80-120			
Bromochloromethane	26.8	5.0	0.32	ug/l	25.0		107 65-135			
Bromodichloromethane	27.4	2.0	0.30	ug/l	25.0		110 70-140			
Bromoform	21.9	5.0	0.32	ug/l	25.0		88 55-135			
Bromomethane	28.9	5.0	0.34	ug/l	25.0		116 60-140			
n-Butylbenzene	27.0	5.0	0.37	ug/l	25.0		108 75-130			
sec-Butylbenzene	27.3	5.0	0.25	ug/l	25.0		109 75-125			
tert-Butylbenzene	25.5	5.0	0.22	ug/l	25.0		102 75-125			
Carbon tetrachloride	26.2	5.0	0.28	ug/l	25.0		105 70-140			
Chlorobenzene	24.2	2.0	0.36	ug/l	25.0		97 80-125			
Chloroethane	28.0	5.0	0.33	ug/l	25.0		112 60-145			
Chloroform	27.2	2.0	0.33	ug/l	25.0		109 75-130			
Chloromethane	27.7	5.0	0.30	ug/l	25.0		111 40-145			
2-Chlorotoluene	26.2	5.0	0.28	ug/l	25.0		105 75-125			
4-Chlorotoluene	26.6	5.0	0.29	ug/l	25.0		106 75-125			
Dibromochloromethane	23.1	2.0	0.28	ug/l	25.0		92 65-145			
1,2-Dibromo-3-chloropropane	24.5	5.0	0.92	ug/l	25.0		98 50-135			
1,2-Dibromoethane (EDB)	26.0	2.0	0.32	ug/l	25.0		104 75-125			
Dibromomethane	25.2	2.0	0.36	ug/l	25.0		101 75-130			
1,2-Dichlorobenzene	24.6	2.0	0.32	ug/l	25.0		98 80-120			
1,3-Dichlorobenzene	24.4	2.0	0.35	ug/l	25.0		98 80-120			
1,4-Dichlorobenzene	24.9	2.0	0.37	ug/l	25.0		100 80-120			
Dichlorodifluoromethane	30.0	5.0	0.79	ug/l	25.0		120 10-160			
1,1-Dichloroethane	27.0	2.0	0.27	ug/l	25.0		108 70-135			
1,2-Dichloroethane	24.5	2.0	0.28	ug/l	25.0		98 60-150			
1,1-Dichloroethene	28.1	5.0	0.32	ug/l	25.0		112 75-135			
cis-1,2-Dichloroethene	26.2	2.0	0.32	ug/l	25.0		105 70-125			
trans-1,2-Dichloroethene	28.3	2.0	0.27	ug/l	25.0		113 70-130			
1,2-Dichloropropane	25.7	2.0	0.35	ug/l	25.0		103 70-120			
1,3-Dichloropropane	25.0	2.0	0.30	ug/l	25.0		100 70-130			
2,2-Dichloropropane	28.2	2.0	0.29	ug/l	25.0		113 65-150			
1,1-Dichloropropene	27.2	2.0	0.28	ug/l	25.0		109 75-130			
cis-1,3-Dichloropropene	26.9	2.0	0.22	ug/l	25.0		108 75-130			
trans-1,3-Dichloropropene	27.0	2.0	0.24	ug/l	25.0		108 75-135			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 26 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K28012 Extracted: 11/28/04										
LCS Analyzed: 11/28/04 (4K28012-BS1)										
Ethylbenzene	25.7	2.0	0.25	ug/l	25.0		103 80-120			
Hexachlorobutadiene	22.9	5.0	0.38	ug/l	25.0		92 65-140			
Isopropylbenzene	28.4	2.0	0.25	ug/l	25.0		114 75-125			
p-Isopropyltoluene	25.3	2.0	0.28	ug/l	25.0		101 75-125			
Methylene chloride	29.2	5.0	0.48	ug/l	25.0		117 60-135			
Naphthalene	23.2	5.0	0.41	ug/l	25.0		93 50-145			
n-Propylbenzene	27.4	2.0	0.27	ug/l	25.0		110 75-130			
Styrene	27.5	2.0	0.16	ug/l	25.0		110 80-135			
1,1,1,2-Tetrachloroethane	24.7	5.0	0.27	ug/l	25.0		99 70-145			
1,1,2,2-Tetrachloroethane	26.8	2.0	0.24	ug/l	25.0		107 60-135			
Tetrachloroethene	24.4	2.0	0.32	ug/l	25.0		98 75-125			
Toluene	24.8	2.0	0.36	ug/l	25.0		99 75-120			
1,2,3-Trichlorobenzene	23.5	5.0	0.45	ug/l	25.0		94 65-135			
1,2,4-Trichlorobenzene	24.8	5.0	0.48	ug/l	25.0		99 70-140			
1,1,1-Trichloroethane	26.8	2.0	0.30	ug/l	25.0		107 75-140			
1,1,2-Trichloroethane	25.0	2.0	0.30	ug/l	25.0		100 70-125			
Trichloroethene	24.7	2.0	0.26	ug/l	25.0		99 80-120			
Trichlorofluoromethane	29.5	5.0	0.34	ug/l	25.0		118 65-145			
1,2,3-Trichloropropane	25.0	10	0.85	ug/l	25.0		100 60-130			
1,2,4-Trimethylbenzene	27.3	2.0	0.23	ug/l	25.0		109 75-125			
1,3,5-Trimethylbenzene	27.9	2.0	0.26	ug/l	25.0		112 75-125			
Vinyl chloride	25.6	5.0	0.26	ug/l	25.0		102 50-130			
o-Xylene	25.4	2.0	0.24	ug/l	25.0		102 75-125			
m,p-Xylenes	53.0	2.0	0.52	ug/l	50.0		106 75-120			
Xylenes, Total	78.4	4.0	0.52	ug/l	75.0		105 75-125			
Di-isopropyl Ether (DIPE)	27.9	5.0	0.25	ug/l	25.0		112 65-135			
Ethyl tert-Butyl Ether (ETBE)	26.5	5.0	0.28	ug/l	25.0		106 60-140			
tert-Amyl Methyl Ether (TAME)	28.1	5.0	0.33	ug/l	25.0		112 60-140			
Methyl-tert-butyl Ether (MTBE)	27.3	5.0	0.32	ug/l	25.0		109 55-145			
tert-Butanol (TBA)	117	50	3.1	ug/l	125		94 70-140			
Ethanol	240	150	100	ug/l	250		96 35-165			
Surrogate: Dibromofluoromethane	26.6			ug/l	25.0		106 80-120			
Surrogate: Toluene-d8	27.0			ug/l	25.0		108 80-120			
Surrogate: 4-Bromofluorobenzene	24.4			ug/l	25.0		98 80-120			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 27 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K28012 Extracted: 11/28/04										
Matrix Spike Analyzed: 11/28/04 (4K28012-MS1)					Source: INK1387-04					
Benzene	29.6	2.0	0.28	ug/l	25.0	ND	118	70-120		
Bromobenzene	27.9	5.0	0.27	ug/l	25.0	ND	112	65-130		
Bromochloromethane	29.9	5.0	0.32	ug/l	25.0	ND	120	65-140		
Bromodichloromethane	30.2	2.0	0.30	ug/l	25.0	ND	121	70-140		
Bromoform	25.1	5.0	0.32	ug/l	25.0	ND	100	55-140		
Bromomethane	31.8	5.0	0.34	ug/l	25.0	ND	127	50-145		
n-Butylbenzene	29.2	5.0	0.37	ug/l	25.0	ND	117	70-140		
sec-Butylbenzene	29.5	5.0	0.25	ug/l	25.0	ND	118	70-130		
tert-Butylbenzene	27.8	5.0	0.22	ug/l	25.0	ND	111	70-130		
Carbon tetrachloride	28.4	5.0	0.28	ug/l	25.0	ND	114	70-145		
Chlorobenzene	26.4	2.0	0.36	ug/l	25.0	ND	106	80-125		
Chloroethane	31.0	5.0	0.33	ug/l	25.0	ND	124	50-145		
Chloroform	30.3	2.0	0.33	ug/l	25.0	ND	121	70-135		
Chloromethane	30.8	5.0	0.30	ug/l	25.0	ND	123	35-145		
2-Chlorotoluene	28.0	5.0	0.28	ug/l	25.0	ND	112	70-140		
4-Chlorotoluene	28.6	5.0	0.29	ug/l	25.0	ND	114	70-140		
Dibromochloromethane	26.2	2.0	0.28	ug/l	25.0	ND	105	65-145		
1,2-Dibromo-3-chloropropane	30.2	5.0	0.92	ug/l	25.0	ND	121	45-155		
1,2-Dibromoethane (EDB)	29.9	2.0	0.32	ug/l	25.0	ND	120	70-130		
Dibromomethane	28.7	2.0	0.36	ug/l	25.0	ND	115	65-140		
1,2-Dichlorobenzene	27.3	2.0	0.32	ug/l	25.0	ND	109	75-130		
1,3-Dichlorobenzene	26.9	2.0	0.35	ug/l	25.0	ND	108	75-130		
1,4-Dichlorobenzene	27.3	2.0	0.37	ug/l	25.0	ND	109	80-120		
Dichlorodifluoromethane	34.5	5.0	0.79	ug/l	25.0	ND	138	10-160		
1,1-Dichloroethane	29.4	2.0	0.27	ug/l	25.0	ND	118	65-135		
1,2-Dichloroethane	27.8	2.0	0.28	ug/l	25.0	ND	111	60-150		
1,1-Dichloroethene	30.4	5.0	0.32	ug/l	25.0	ND	122	65-140		
cis-1,2-Dichloroethene	28.7	2.0	0.32	ug/l	25.0	ND	115	65-130		
trans-1,2-Dichloroethene	30.6	2.0	0.27	ug/l	25.0	ND	122	65-135		
1,2-Dichloropropane	28.0	2.0	0.35	ug/l	25.0	ND	112	65-130		
1,3-Dichloropropane	28.9	2.0	0.30	ug/l	25.0	ND	116	65-140		
2,2-Dichloropropane	31.8	2.0	0.29	ug/l	25.0	ND	127	60-150		
1,1-Dichloropropene	29.4	2.0	0.28	ug/l	25.0	ND	118	65-140		
cis-1,3-Dichloropropene	29.8	2.0	0.22	ug/l	25.0	ND	119	70-140		
trans-1,3-Dichloropropene	30.7	2.0	0.24	ug/l	25.0	ND	123	70-140		

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 28 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K28012 Extracted: 11/28/04										
Matrix Spike Analyzed: 11/28/04 (4K28012-MS1)					Source: INK1387-04					
Ethylbenzene	28.0	2.0	0.25	ug/l	25.0	ND	112	70-130		
Hexachlorobutadiene	24.6	5.0	0.38	ug/l	25.0	ND	98	65-140		
Isopropylbenzene	30.6	2.0	0.25	ug/l	25.0	ND	122	70-130		
p-Isopropyltoluene	27.3	2.0	0.28	ug/l	25.0	ND	109	70-130		
Methylene chloride	31.7	5.0	0.48	ug/l	25.0	ND	127	60-135		
Naphthalene	27.7	5.0	0.41	ug/l	25.0	ND	111	50-150		
n-Propylbenzene	29.4	2.0	0.27	ug/l	25.0	ND	118	70-135		
Styrene	6.64	2.0	0.16	ug/l	25.0	ND	27	55-145		LN,AY
1,1,1,2-Tetrachloroethane	27.0	5.0	0.27	ug/l	25.0	ND	108	70-145		
1,1,2,2-Tetrachloroethane	32.3	2.0	0.24	ug/l	25.0	ND	129	60-145		
Tetrachloroethene	26.5	2.0	0.32	ug/l	25.0	ND	106	70-130		
Toluene	27.2	2.0	0.36	ug/l	25.0	ND	109	70-120		
1,2,3-Trichlorobenzene	26.4	5.0	0.45	ug/l	25.0	ND	106	60-140		
1,2,4-Trichlorobenzene	27.0	5.0	0.48	ug/l	25.0	ND	108	60-140		
1,1,1-Trichloroethane	29.4	2.0	0.30	ug/l	25.0	ND	118	75-140		
1,1,2-Trichloroethane	28.8	2.0	0.30	ug/l	25.0	ND	115	60-135		
Trichloroethene	26.4	2.0	0.26	ug/l	25.0	ND	106	70-125		
Trichlorofluoromethane	32.7	5.0	0.34	ug/l	25.0	ND	131	55-145		
1,2,3-Trichloropropane	30.1	10	0.85	ug/l	25.0	ND	120	55-140		
1,2,4-Trimethylbenzene	29.6	2.0	0.23	ug/l	25.0	ND	118	60-125		
1,3,5-Trimethylbenzene	30.1	2.0	0.26	ug/l	25.0	ND	120	70-130		
Vinyl chloride	27.6	5.0	0.26	ug/l	25.0	ND	110	40-135		
o-Xylene	27.7	2.0	0.24	ug/l	25.0	ND	111	65-125		
m,p-Xylenes	57.7	2.0	0.52	ug/l	50.0	ND	115	65-130		
Xylenes, Total	85.4	4.0	0.52	ug/l	75.0	ND	114	65-135		
Di-isopropyl Ether (DIPE)	31.1	5.0	0.25	ug/l	25.0	ND	124	65-140		
Ethyl tert-Butyl Ether (ETBE)	29.7	5.0	0.28	ug/l	25.0	ND	119	60-140		
tert-Amyl Methyl Ether (TAME)	32.5	5.0	0.33	ug/l	25.0	ND	130	55-145		
Methyl-tert-butyl Ether (MTBE)	32.4	5.0	0.32	ug/l	25.0	ND	130	50-155		
tert-Butanol (TBA)	133	50	3.1	ug/l	125	ND	106	65-145		
Ethanol	260	150	100	ug/l	250	ND	104	35-165		
Surrogate: Dibromofluoromethane	26.4			ug/l	25.0		106	80-120		
Surrogate: Toluene-d8	26.3			ug/l	25.0		105	80-120		
Surrogate: 4-Bromofluorobenzene	23.7			ug/l	25.0		95	80-120		

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 29 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K28012 Extracted: 11/28/04											
Matrix Spike Dup Analyzed: 11/28/04 (4K28012-MSD1)						Source: INK1387-04					
Benzene	28.3	2.0	0.28	ug/l	25.0	ND	113	70-120	4	20	
Bromobenzene	26.7	5.0	0.27	ug/l	25.0	ND	107	65-130	4	20	
Bromochloromethane	28.6	5.0	0.32	ug/l	25.0	ND	114	65-140	4	25	
Bromodichloromethane	28.8	2.0	0.30	ug/l	25.0	ND	115	70-140	5	20	
Bromoform	25.7	5.0	0.32	ug/l	25.0	ND	103	55-140	2	25	
Bromomethane	31.4	5.0	0.34	ug/l	25.0	ND	126	50-145	1	25	
n-Butylbenzene	27.4	5.0	0.37	ug/l	25.0	ND	110	70-140	6	20	
sec-Butylbenzene	28.4	5.0	0.25	ug/l	25.0	ND	114	70-130	4	20	
tert-Butylbenzene	26.4	5.0	0.22	ug/l	25.0	ND	106	70-130	5	20	
Carbon tetrachloride	26.9	5.0	0.28	ug/l	25.0	ND	108	70-145	5	25	
Chlorobenzene	24.8	2.0	0.36	ug/l	25.0	ND	99	80-125	6	20	
Chloroethane	30.6	5.0	0.33	ug/l	25.0	ND	122	50-145	1	25	
Chloroform	28.4	2.0	0.33	ug/l	25.0	ND	114	70-135	6	20	
Chloromethane	30.0	5.0	0.30	ug/l	25.0	ND	120	35-145	3	25	
2-Chlorotoluene	26.9	5.0	0.28	ug/l	25.0	ND	108	70-140	4	20	
4-Chlorotoluene	27.2	5.0	0.29	ug/l	25.0	ND	109	70-140	5	20	
Dibromochloromethane	25.2	2.0	0.28	ug/l	25.0	ND	101	65-145	4	25	
1,2-Dibromo-3-chloropropane	31.9	5.0	0.92	ug/l	25.0	ND	128	45-155	5	30	
1,2-Dibromoethane (EDB)	29.6	2.0	0.32	ug/l	25.0	ND	118	70-130	1	25	
Dibromomethane	28.0	2.0	0.36	ug/l	25.0	ND	112	65-140	2	25	
1,2-Dichlorobenzene	26.0	2.0	0.32	ug/l	25.0	ND	104	75-130	5	20	
1,3-Dichlorobenzene	25.4	2.0	0.35	ug/l	25.0	ND	102	75-130	6	20	
1,4-Dichlorobenzene	26.2	2.0	0.37	ug/l	25.0	ND	105	80-120	4	20	
Dichlorodifluoromethane	33.1	5.0	0.79	ug/l	25.0	ND	132	10-160	4	30	
1,1-Dichloroethane	27.6	2.0	0.27	ug/l	25.0	ND	110	65-135	6	20	
1,2-Dichloroethane	26.5	2.0	0.28	ug/l	25.0	ND	106	60-150	5	20	
1,1-Dichloroethene	28.7	5.0	0.32	ug/l	25.0	ND	115	65-140	6	20	
cis-1,2-Dichloroethene	27.2	2.0	0.32	ug/l	25.0	ND	109	65-130	5	20	
trans-1,2-Dichloroethene	29.3	2.0	0.27	ug/l	25.0	ND	117	65-135	4	20	
1,2-Dichloropropane	26.5	2.0	0.35	ug/l	25.0	ND	106	65-130	6	20	
1,3-Dichloropropane	27.8	2.0	0.30	ug/l	25.0	ND	111	65-140	4	25	
2,2-Dichloropropane	30.6	2.0	0.29	ug/l	25.0	ND	122	60-150	4	25	
1,1-Dichloropropene	27.8	2.0	0.28	ug/l	25.0	ND	111	65-140	6	20	
cis-1,3-Dichloropropene	28.5	2.0	0.22	ug/l	25.0	ND	114	70-140	4	20	
trans-1,3-Dichloropropene	29.5	2.0	0.24	ug/l	25.0	ND	118	70-140	4	25	

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 30 of 33>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE ORGANICS with OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	MDL	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K28012 Extracted: 11/28/04											
Matrix Spike Dup Analyzed: 11/28/04 (4K28012-MSD1)						Source: INK1387-04					
Ethylbenzene	26.5	2.0	0.25	ug/l	25.0	ND	106	70-130	6	20	
Hexachlorobutadiene	22.9	5.0	0.38	ug/l	25.0	ND	92	65-140	7	20	
Isopropylbenzene	28.9	2.0	0.25	ug/l	25.0	ND	116	70-130	6	20	
p-Isopropyltoluene	26.0	2.0	0.28	ug/l	25.0	ND	104	70-130	5	20	
Methylene chloride	29.6	5.0	0.48	ug/l	25.0	ND	118	60-135	7	20	
Naphthalene	27.7	5.0	0.41	ug/l	25.0	ND	111	50-150	0	30	
n-Propylbenzene	27.9	2.0	0.27	ug/l	25.0	ND	112	70-135	5	20	
Styrene	5.30	2.0	0.16	ug/l	25.0	ND	21	55-145	22	30	LN,AY
1,1,1,2-Tetrachloroethane	25.8	5.0	0.27	ug/l	25.0	ND	103	70-145	5	20	
1,1,2,2-Tetrachloroethane	33.5	2.0	0.24	ug/l	25.0	ND	134	60-145	4	30	
Tetrachloroethene	25.1	2.0	0.32	ug/l	25.0	ND	100	70-130	5	20	
Toluene	25.8	2.0	0.36	ug/l	25.0	ND	103	70-120	5	20	
1,2,3-Trichlorobenzene	25.3	5.0	0.45	ug/l	25.0	ND	101	60-140	4	20	
1,2,4-Trichlorobenzene	25.2	5.0	0.48	ug/l	25.0	ND	101	60-140	7	20	
1,1,1-Trichloroethane	27.7	2.0	0.30	ug/l	25.0	ND	111	75-140	6	20	
1,1,2-Trichloroethane	28.6	2.0	0.30	ug/l	25.0	ND	114	60-135	1	25	
Trichloroethene	25.0	2.0	0.26	ug/l	25.0	ND	100	70-125	5	20	
Trichlorofluoromethane	30.8	5.0	0.34	ug/l	25.0	ND	123	55-145	6	25	
1,2,3-Trichloropropane	31.2	10	0.85	ug/l	25.0	ND	125	55-140	4	30	
1,2,4-Trimethylbenzene	28.1	2.0	0.23	ug/l	25.0	ND	112	60-125	5	25	
1,3,5-Trimethylbenzene	28.8	2.0	0.26	ug/l	25.0	ND	115	70-130	4	20	
Vinyl chloride	25.9	5.0	0.26	ug/l	25.0	ND	104	40-135	6	30	
o-Xylene	26.6	2.0	0.24	ug/l	25.0	ND	106	65-125	4	20	
m,p-Xylenes	54.3	2.0	0.52	ug/l	50.0	ND	109	65-130	6	25	
Xylenes, Total	81.0	4.0	0.52	ug/l	75.0	ND	108	65-135	5	20	
Di-isopropyl Ether (DIPE)	29.7	5.0	0.25	ug/l	25.0	ND	119	65-140	5	25	
Ethyl tert-Butyl Ether (ETBE)	28.7	5.0	0.28	ug/l	25.0	ND	115	60-140	3	25	
tert-Amyl Methyl Ether (TAME)	31.6	5.0	0.33	ug/l	25.0	ND	126	55-145	3	30	
Methyl-tert-butyl Ether (MTBE)	32.0	5.0	0.32	ug/l	25.0	ND	128	50-155	1	25	
tert-Butanol (TBA)	123	50	3.1	ug/l	125	ND	98	65-145	8	25	
Ethanol	245	150	100	ug/l	250	ND	98	35-165	6	30	
Surrogate: Dibromofluoromethane	26.3			ug/l	25.0		105	80-120			
Surrogate: Toluene-d8	26.4			ug/l	25.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	24.0			ug/l	25.0		96	80-120			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 31 of 33>



SECOR International, Inc.-Thousand Oaks
290 Conejo Ridge Avenue, Suite 200
Thousand Oaks, CA 91361
Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
Received: 11/17/04

DATA QUALIFIERS AND DEFINITIONS

J,DX EPA Flag - Estimated value, Value < lowest standard (MQL), but > than MDL
LN,AY The MS and/or MSD were below the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

ADDITIONAL COMMENTS

For 8260 analyses:

Due to the high water solubility of alcohols and ketones, the calibration criteria for these compounds is <30% RSD.
The average % RSD of all compounds in the calibration is 15%, in accordance with EPA methods.

For GRO (C4-C12):

GRO (C4-C12) is quantitated against a gasoline standard. Quantitation begins immediately following the methanol peak.

8015 Analysis EDF Parlabel Cross Reference

Analyte	EDF Parlabel
GRO (C4 - C12)	GROC4C12

Del Mar Analytical, Irvine
Wendy Kirkeeng
Project Manager



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
290 Conejo Ridge Avenue, Suite 200
Thousand Oaks, CA 91361
Attention: John Bollier

Project ID: ARCO 0031, South Gate

Report Number: INK1303

Sampled: 11/16/04-11/17/04
Received: 11/17/04

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	NELAP	CA
EPA 8015B	Water	X	X
EPA 8260B	Water	X	X

NV and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

Del Mar Analytical, Irvine
Wendy Kirkeeng
Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1303 <Page 33 of 33>



Chain of Custody Record

Project Name: 2004-Q4 Groundwater
BP BU/AR Region/Enfos Segment: Terminal
State or Lead Regulatory Agency: Atlantic Richfield
Requested Due Date (mm/dd/yy): Standard TAT

On-site Time:	Temp:
Off-site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Lab Name:	Del Mar Analytical	BP/AR Facility No.:	8601 Garfield Blvd., South Gate, CA	Consultant/Contractor:	SECOR International, Inc.
Address:	2852 Alton Ave.	BP/AR Facility Address:	0031	Address:	290 Conejo Ridge Ave. #200
	Irvine, CA 92606	Site Lat/Long:	33.95 / -118.17		Thousand Oaks, CA. 91361
Lab PM:	Chris Roberts	California Global ID No.:	T0603705048	Consultant/Contractor Project No.:	37BP.00031.08
Tele/Fax:	949-261-1022 / 949-261-1228	Enfos Project No.:	G09K0-0335	Consultant/Contractor PM:	John Bolier
BP/AR PM Contact:	Darrell Fah	Provision		Tele/Fax:	(805) 230-1266 / (805) 230-1277
Address:	4 Centre Point Dr.	Phase/WBS:	5 INTERIM RESPONSE	Report Type & QC Level:	
	La Palma, CA	Sub Phase/Task:	ANALYTICAL	E-mail EDD To:	bauchard@secor.com
Tele/Fax:	(714) 378-5105	Cost Element:	SUBCONTRACT COST	Invoice to:	Consultant

Lab Bottle Order No:				Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis										Sample Point Lat/Long and Comments
Item No.	Sample Description	Time	Date	Soil/Solid	Water/Liquid	Air			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	GRO (8015) C4-C12	BTEX/OXY/ET (8260)	VOCs/Ketones (8260)								
1	MW-19	0120	11/17/04		X		JNK1303	6				X		X	X	X								Sample Date 11/17/04
2	MW-20	1850	11/16/04		X			6				X		X	X	X								
3	FB-5110-20041116	1830	11/16/04		X			6				X		X	X	X								QCFB
4	TB-5110-20041116	-----	11/16/04		X			4				X		X	X	X								QCTB
5																								
6																								
7																								
8																								
9																								
10																								

Sampler's Name:	Shawn Dickerson	Relinquished By / Affiliation		Date	Time	Accepted By / Affiliation		Date	Time
Sampler's Company:	SECOR International, Inc.			11/24	1600			11/24	1600
Shipment Date:				11/24	1810				
Shipment Method:									
Shipment Tracking No:									

Special Instructions:

Custody Seals In Place Yes ☒ No ☐ Temp Blank Yes ☒ No ☐ Cooler Temperature on Receipt ☒ °F/C Trip Blank Yes ☒ No ☐

INITIAL
TR



LABORATORY REPORT

Prepared For: SECOR International, Inc.-Thousand Oaks
290 Conejo Ridge Avenue, Suite 200
Thousand Oaks, CA 91361
Attention: Gareth Roberts

Project: ARCO 5110, Southgate

Sampled: 11/16/04
Received: 11/17/04
Issued: 12/02/04 12:28

NELAP #01108CA CA ELAP #1197 CSDLAC #10117

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the applicable certifications as noted. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.

This entire report was reviewed and approved for release.

CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 5°C, on ice and with chain of custody documentation.

HOLDING TIMES: All samples were analyzed within prescribed holding times and/or in accordance with the Del Mar Analytical Sample Acceptance Policy unless otherwise noted in the report.

PRESERVATION: Samples requiring preservation were verified prior to sample analysis.

QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.

COMMENTS: No significant observations were made.

SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID

CLIENT ID

MATRIX

INK1253-01	MW-A1	Water
INK1253-02	MW-A2	Water
INK1253-03	MW-A3	Water
INK1253-04	MW-A4	Water
INK1253-05	MW-A5	Water
INK1253-06	MW-A6	Water
INK1253-07	MW-A7	Water
INK1253-08	DUP-5110-20041116	Water

Reviewed By:

Del Mar Analytical, Irvine
Wendy Kirkeeng
Project Manager



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate

Report Number: INK1253

Sampled: 11/16/04
 Received: 11/17/04

VOLATILE FUEL HYDROCARBONS (EPA 5030/8015M)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1253-01 (MW-A1 - Water)								
Reporting Units: ug/l								
GRO (C4 - C12)	EPA 8015B	4K24004	50	ND	1	11/24/2004	11/24/2004	
Surrogate: 4-BFB (FID) (60-135%)				103 %				
Sample ID: INK1253-02 (MW-A2 - Water)								
Reporting Units: ug/l								
GRO (C4 - C12)	EPA 8015B	4K24004	1000	2200	20	11/24/2004	11/24/2004	
Surrogate: 4-BFB (FID) (60-135%)				93 %				
Sample ID: INK1253-03 (MW-A3 - Water)								
Reporting Units: ug/l								
GRO (C4 - C12)	EPA 8015B	4K24004	1000	7000	20	11/24/2004	11/24/2004	
Surrogate: 4-BFB (FID) (60-135%)				81 %				
Sample ID: INK1253-04 (MW-A4 - Water)								
Reporting Units: ug/l								
GRO (C4 - C12)	EPA 8015B	4K24004	5000	24000	100	11/24/2004	11/24/2004	
Surrogate: 4-BFB (FID) (60-135%)				92 %				
Sample ID: INK1253-05 (MW-A5 - Water)								
Reporting Units: ug/l								
GRO (C4 - C12)	EPA 8015B	4K24129	250	2400	5	11/24/2004	11/24/2004	
Surrogate: 4-BFB (FID) (60-135%)				99 %				
Sample ID: INK1253-06 (MW-A6 - Water)								
Reporting Units: ug/l								
GRO (C4 - C12)	EPA 8015B	4K24002	50	67	1	11/24/2004	11/24/2004	PV
Surrogate: 4-BFB (FID) (60-135%)				104 %				
Sample ID: INK1253-07 (MW-A7 - Water)								
Reporting Units: ug/l								
GRO (C4 - C12)	EPA 8015B	4K24002	500	2100	10	11/24/2004	11/24/2004	PV
Surrogate: 4-BFB (FID) (60-135%)				93 %				
Sample ID: INK1253-08 (DUP-5110-20041116 - Water)								
Reporting Units: ug/l								
GRO (C4 - C12)	EPA 8015B	4K24002	1000	4900	20	11/24/2004	11/24/2004	PV
Surrogate: 4-BFB (FID) (60-135%)				85 %				

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1253 <Page 2 of 16>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate

Report Number: INK1253

Sampled: 11/16/04
 Received: 11/17/04

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1253-01 (MW-A1 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K26020	2.0	4.0	1	11/26/2004	11/26/2004	
Ethylbenzene	EPA 8260B	4K26020	2.0	ND	1	11/26/2004	11/26/2004	
Toluene	EPA 8260B	4K26020	2.0	ND	1	11/26/2004	11/26/2004	
m,p-Xylenes	EPA 8260B	4K26020	2.0	ND	1	11/26/2004	11/26/2004	
o-Xylene	EPA 8260B	4K26020	2.0	ND	1	11/26/2004	11/26/2004	
Xylenes, Total	EPA 8260B	4K26020	4.0	ND	1	11/26/2004	11/26/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K26020	5.0	ND	1	11/26/2004	11/26/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K26020	5.0	ND	1	11/26/2004	11/26/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K26020	5.0	ND	1	11/26/2004	11/26/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K26020	5.0	ND	1	11/26/2004	11/26/2004	
tert-Butanol (TBA)	EPA 8260B	4K26020	50	ND	1	11/26/2004	11/26/2004	
Ethanol	EPA 8260B	4K26020	150	ND	1	11/26/2004	11/26/2004	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>				<i>102 %</i>				
<i>Surrogate: Toluene-d8 (80-120%)</i>				<i>102 %</i>				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>				<i>100 %</i>				
Sample ID: INK1253-02 (MW-A2 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K26035	8.0	330	4	11/26/2004	11/27/2004	
Ethylbenzene	EPA 8260B	4K26035	8.0	61	4	11/26/2004	11/27/2004	
Toluene	EPA 8260B	4K26035	8.0	46	4	11/26/2004	11/27/2004	
m,p-Xylenes	EPA 8260B	4K26035	8.0	99	4	11/26/2004	11/27/2004	
o-Xylene	EPA 8260B	4K26035	8.0	33	4	11/26/2004	11/27/2004	
Xylenes, Total	EPA 8260B	4K26035	16	130	4	11/26/2004	11/27/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K26035	20	ND	4	11/26/2004	11/27/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K26035	20	ND	4	11/26/2004	11/27/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K26035	20	ND	4	11/26/2004	11/27/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K26035	20	ND	4	11/26/2004	11/27/2004	
tert-Butanol (TBA)	EPA 8260B	4K26035	200	ND	4	11/26/2004	11/27/2004	
Ethanol	EPA 8260B	4K26035	600	ND	4	11/26/2004	11/27/2004	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>				<i>117 %</i>				
<i>Surrogate: Toluene-d8 (80-120%)</i>				<i>115 %</i>				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>				<i>112 %</i>				

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1253 <Page 3 of 16>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate

Report Number: INK1253

Sampled: 11/16/04
 Received: 11/17/04

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1253-03 (MW-A3 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K26020	80	2900	40	11/26/2004	11/26/2004	
Ethylbenzene	EPA 8260B	4K26020	80	ND	40	11/26/2004	11/26/2004	
Toluene	EPA 8260B	4K26020	80	ND	40	11/26/2004	11/26/2004	
m,p-Xylenes	EPA 8260B	4K26020	80	ND	40	11/26/2004	11/26/2004	
o-Xylene	EPA 8260B	4K26020	80	ND	40	11/26/2004	11/26/2004	
Xylenes, Total	EPA 8260B	4K26020	160	ND	40	11/26/2004	11/26/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K26020	200	ND	40	11/26/2004	11/26/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K26020	200	ND	40	11/26/2004	11/26/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K26020	200	ND	40	11/26/2004	11/26/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K26020	200	570	40	11/26/2004	11/26/2004	
tert-Butanol (TBA)	EPA 8260B	4K26020	2000	ND	40	11/26/2004	11/26/2004	
Ethanol	EPA 8260B	4K26020	6000	ND	40	11/26/2004	11/26/2004	
Surrogate: Dibromofluoromethane (80-120%)				103 %				
Surrogate: Toluene-d8 (80-120%)				103 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				99 %				
Sample ID: INK1253-04 (MW-A4 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K26020	200	7400	100	11/26/2004	11/26/2004	
Ethylbenzene	EPA 8260B	4K26020	200	1100	100	11/26/2004	11/26/2004	
Toluene	EPA 8260B	4K26020	200	980	100	11/26/2004	11/26/2004	
m,p-Xylenes	EPA 8260B	4K26020	200	2400	100	11/26/2004	11/26/2004	
o-Xylene	EPA 8260B	4K26020	200	300	100	11/26/2004	11/26/2004	
Xylenes, Total	EPA 8260B	4K26020	400	2700	100	11/26/2004	11/26/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K26020	500	ND	100	11/26/2004	11/26/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K26020	500	ND	100	11/26/2004	11/26/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K26020	500	ND	100	11/26/2004	11/26/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K26020	500	ND	100	11/26/2004	11/26/2004	
tert-Butanol (TBA)	EPA 8260B	4K26020	5000	ND	100	11/26/2004	11/26/2004	
Ethanol	EPA 8260B	4K26020	15000	ND	100	11/26/2004	11/26/2004	
Surrogate: Dibromofluoromethane (80-120%)				104 %				
Surrogate: Toluene-d8 (80-120%)				103 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				100 %				

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1253 <Page 4 of 16>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate

Report Number: INK1253

Sampled: 11/16/04
 Received: 11/17/04

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1253-05 (MW-A5 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K26020	8.0	180	4	11/26/2004	11/26/2004	
Ethylbenzene	EPA 8260B	4K26020	8.0	93	4	11/26/2004	11/26/2004	
Toluene	EPA 8260B	4K26020	8.0	ND	4	11/26/2004	11/26/2004	
m,p-Xylenes	EPA 8260B	4K26020	8.0	430	4	11/26/2004	11/26/2004	
o-Xylene	EPA 8260B	4K26020	8.0	240	4	11/26/2004	11/26/2004	
Xylenes, Total	EPA 8260B	4K26020	16	660	4	11/26/2004	11/26/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K26020	20	ND	4	11/26/2004	11/26/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K26020	20	ND	4	11/26/2004	11/26/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K26020	20	ND	4	11/26/2004	11/26/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K26020	20	370	4	11/26/2004	11/26/2004	
tert-Butanol (TBA)	EPA 8260B	4K26020	200	790	4	11/26/2004	11/26/2004	
Ethanol	EPA 8260B	4K26020	600	ND	4	11/26/2004	11/26/2004	
Surrogate: Dibromofluoromethane (80-120%)				106 %				
Surrogate: Toluene-d8 (80-120%)				102 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				100 %				

Sample ID: INK1253-06 (MW-A6 - Water)

Reporting Units: ug/l								
Benzene	EPA 8260B	4K26020	2.0	21	1	11/26/2004	11/26/2004	
Ethylbenzene	EPA 8260B	4K26020	2.0	ND	1	11/26/2004	11/26/2004	
Toluene	EPA 8260B	4K26020	2.0	ND	1	11/26/2004	11/26/2004	
m,p-Xylenes	EPA 8260B	4K26020	2.0	ND	1	11/26/2004	11/26/2004	
o-Xylene	EPA 8260B	4K26020	2.0	ND	1	11/26/2004	11/26/2004	
Xylenes, Total	EPA 8260B	4K26020	4.0	ND	1	11/26/2004	11/26/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K26020	5.0	ND	1	11/26/2004	11/26/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K26020	5.0	ND	1	11/26/2004	11/26/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K26020	5.0	ND	1	11/26/2004	11/26/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K26020	5.0	ND	1	11/26/2004	11/26/2004	
tert-Butanol (TBA)	EPA 8260B	4K26020	50	ND	1	11/26/2004	11/26/2004	
Ethanol	EPA 8260B	4K26020	150	ND	1	11/26/2004	11/26/2004	
Surrogate: Dibromofluoromethane (80-120%)				106 %				
Surrogate: Toluene-d8 (80-120%)				102 %				
Surrogate: 4-Bromofluorobenzene (80-120%)				98 %				

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1253 <Page 5 of 16>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate

Report Number: INK1253

Sampled: 11/16/04
 Received: 11/17/04

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: INK1253-07 (MW-A7 - Water)								
Reporting Units: ug/l								
Benzene	EPA 8260B	4K26020	40	980	20	11/26/2004	11/26/2004	
Ethylbenzene	EPA 8260B	4K26020	40	ND	20	11/26/2004	11/26/2004	
Toluene	EPA 8260B	4K26020	40	ND	20	11/26/2004	11/26/2004	
m,p-Xylenes	EPA 8260B	4K26020	40	ND	20	11/26/2004	11/26/2004	
o-Xylene	EPA 8260B	4K26020	40	ND	20	11/26/2004	11/26/2004	
Xylenes, Total	EPA 8260B	4K26020	80	ND	20	11/26/2004	11/26/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K26020	100	ND	20	11/26/2004	11/26/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K26020	100	ND	20	11/26/2004	11/26/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K26020	100	ND	20	11/26/2004	11/26/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K26020	100	210	20	11/26/2004	11/26/2004	
tert-Butanol (TBA)	EPA 8260B	4K26020	1000	ND	20	11/26/2004	11/26/2004	
Ethanol	EPA 8260B	4K26020	3000	ND	20	11/26/2004	11/26/2004	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>				108 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>				103 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>				101 %				

Sample ID: INK1253-08 (DUP-5110-20041116 - Water)

PC

Reporting Units: ug/l								
Benzene	EPA 8260B	4K29027	40	2300	20	11/29/2004	11/30/2004	
Ethylbenzene	EPA 8260B	4K29027	40	ND	20	11/29/2004	11/30/2004	
Toluene	EPA 8260B	4K29027	40	ND	20	11/29/2004	11/30/2004	
m,p-Xylenes	EPA 8260B	4K29027	40	ND	20	11/29/2004	11/30/2004	
o-Xylene	EPA 8260B	4K29027	40	ND	20	11/29/2004	11/30/2004	
Xylenes, Total	EPA 8260B	4K29027	80	ND	20	11/29/2004	11/30/2004	
Di-isopropyl Ether (DIPE)	EPA 8260B	4K29027	100	ND	20	11/29/2004	11/30/2004	
Ethyl tert-Butyl Ether (ETBE)	EPA 8260B	4K29027	100	ND	20	11/29/2004	11/30/2004	
tert-Amyl Methyl Ether (TAME)	EPA 8260B	4K29027	100	ND	20	11/29/2004	11/30/2004	
Methyl-tert-butyl Ether (MTBE)	EPA 8260B	4K29027	100	520	20	11/29/2004	11/30/2004	
tert-Butanol (TBA)	EPA 8260B	4K29027	1000	ND	20	11/29/2004	11/30/2004	
Ethanol	EPA 8260B	4K29027	3000	ND	20	11/29/2004	11/30/2004	
<i>Surrogate: Dibromofluoromethane (80-120%)</i>				110 %				
<i>Surrogate: Toluene-d8 (80-120%)</i>				106 %				
<i>Surrogate: 4-Bromofluorobenzene (80-120%)</i>				103 %				

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1253 <Page 6 of 16>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate
 Report Number: INK1253

Sampled: 11/16/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE FUEL HYDROCARBONS (EPA 5030/8015M)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K24002 Extracted: 11/24/04										
Blank Analyzed: 11/24/04 (4K24002-BLK1)										
GRO (C4 - C12)	ND	50	ug/l							
Surrogate: 4-BFB (FID)	9.33		ug/l	10.0		93	60-135			
LCS Analyzed: 11/24/04 (4K24002-BS1)										
GRO (C4 - C12)	202	50	ug/l	220		92	70-135			
Surrogate: 4-BFB (FID)	10.9		ug/l	10.0		109	60-135			
Matrix Spike Analyzed: 11/24/04 (4K24002-MS1)					Source: INK1253-06					
GRO (C4 - C12)	252	50	ug/l	220	67	84	60-135			
Surrogate: 4-BFB (FID)	13.5		ug/l	10.0		135	60-135			
Matrix Spike Dup Analyzed: 11/24/04 (4K24002-MSD1)					Source: INK1253-06					
GRO (C4 - C12)	199	50	ug/l	220	67	60	60-135	24	20	RA
Surrogate: 4-BFB (FID)	10.5		ug/l	10.0		105	60-135			
Batch: 4K24004 Extracted: 11/24/04										
Blank Analyzed: 11/24/04 (4K24004-BLK1)										
GRO (C4 - C12)	ND	50	ug/l							
Surrogate: 4-BFB (FID)	9.94		ug/l	10.0		99	60-135			
LCS Analyzed: 11/24/04 (4K24004-BS1)										
GRO (C4 - C12)	240	50	ug/l	220		109	70-135			
Surrogate: 4-BFB (FID)	10.9		ug/l	10.0		109	60-135			
Matrix Spike Analyzed: 11/24/04 (4K24004-MS1)					Source: INK1185-01					
GRO (C4 - C12)	263	50	ug/l	220	23	109	60-135			
Surrogate: 4-BFB (FID)	10.5		ug/l	10.0		105	60-135			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1253 <Page 7 of 16>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate

Report Number: INK1253

Sampled: 11/16/04
 Received: 11/17/04

METHOD BLANK/QC DATA

VOLATILE FUEL HYDROCARBONS (EPA 5030/8015M)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Data Qualifiers
Batch: 4K24004 Extracted: 11/24/04										
Matrix Spike Dup Analyzed: 11/24/04 (4K24004-MSD1)					Source: INK1185-01					
GRO (C4 - C12)	275	50	ug/l	220	23	115	60-135	4	20	
Surrogate: 4-BFB (FID)	10.8		ug/l	10.0		108	60-135			
Batch: 4K24129 Extracted: 11/24/04										
Blank Analyzed: 11/24/04 (4K24129-BLK1)										
GRO (C4 - C12)	ND	50	ug/l							
Surrogate: 4-BFB (FID)	9.53		ug/l	10.0		95	60-135			
LCS Analyzed: 11/24/04 (4K24129-BS1)										
GRO (C4 - C12)	240	50	ug/l	220		109	70-135			
Surrogate: 4-BFB (FID)	9.95		ug/l	10.0		100	60-135			
Matrix Spike Analyzed: 11/24/04 (4K24129-MS1)					Source: INK1211-01					
GRO (C4 - C12)	239	50	ug/l	220	ND	109	60-135			
Surrogate: 4-BFB (FID)	9.85		ug/l	10.0		98	60-135			
Matrix Spike Dup Analyzed: 11/24/04 (4K24129-MSD1)					Source: INK1211-01					
GRO (C4 - C12)	231	50	ug/l	220	ND	105	60-135	3	20	
Surrogate: 4-BFB (FID)	9.81		ug/l	10.0		98	60-135			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1253 <Page 8 of 16>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate
 Report Number: INK1253

Sampled: 11/16/04
 Received: 11/17/04

METHOD BLANK/QC DATA

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K26020 Extracted: 11/26/04										
Blank Analyzed: 11/26/04 (4K26020-BLK1)										
Benzene	ND	2.0	ug/l							
Ethylbenzene	ND	2.0	ug/l							
Toluene	ND	2.0	ug/l							
m,p-Xylenes	ND	2.0	ug/l							
o-Xylene	ND	2.0	ug/l							
Xylenes, Total	ND	4.0	ug/l							
Di-isopropyl Ether (DIPE)	ND	5.0	ug/l							
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	ug/l							
tert-Amyl Methyl Ether (TAME)	ND	5.0	ug/l							
Methyl-tert-butyl Ether (MTBE)	ND	5.0	ug/l							
tert-Butanol (TBA)	ND	50	ug/l							
Ethanol	ND	150	ug/l							
Surrogate: Dibromofluoromethane	24.5		ug/l	25.0		98	80-120			
Surrogate: Toluene-d8	25.2		ug/l	25.0		101	80-120			
Surrogate: 4-Bromofluorobenzene	24.3		ug/l	25.0		97	80-120			
LCS Analyzed: 11/26/04 (4K26020-BS1)										
Benzene	25.0	2.0	ug/l	25.0		100	70-120			
Ethylbenzene	25.7	2.0	ug/l	25.0		103	80-120			
Toluene	25.6	2.0	ug/l	25.0		102	75-120			
m,p-Xylenes	52.6	2.0	ug/l	50.0		105	75-120			
o-Xylene	25.0	2.0	ug/l	25.0		100	75-125			
Xylenes, Total	77.7	4.0	ug/l	75.0		104	75-125			
Di-isopropyl Ether (DIPE)	24.8	5.0	ug/l	25.0		99	65-135			
Ethyl tert-Butyl Ether (ETBE)	23.8	5.0	ug/l	25.0		95	60-140			
tert-Amyl Methyl Ether (TAME)	24.6	5.0	ug/l	25.0		98	60-140			
Methyl-tert-butyl Ether (MTBE)	24.2	5.0	ug/l	25.0		97	55-145			
tert-Butanol (TBA)	123	50	ug/l	125		98	70-140			
Ethanol	238	150	ug/l	250		95	35-165			
Surrogate: Dibromofluoromethane	24.7		ug/l	25.0		99	80-120			
Surrogate: Toluene-d8	25.6		ug/l	25.0		102	80-120			
Surrogate: 4-Bromofluorobenzene	24.6		ug/l	25.0		98	80-120			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1253 <Page 9 of 16>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate
 Report Number: INK1253

Sampled: 11/16/04
 Received: 11/17/04

METHOD BLANK/QC DATA

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K26020 Extracted: 11/26/04										
Matrix Spike Analyzed: 11/26/04 (4K26020-MS1)					Source: INK1253-01					
Benzene	29.2	2.0	ug/l	25.0	4.0	101	70-120			
Ethylbenzene	25.9	2.0	ug/l	25.0	0.89	100	70-130			
Toluene	27.1	2.0	ug/l	25.0	1.0	104	70-120			
m,p-Xylenes	52.7	2.0	ug/l	50.0	1.9	102	65-130			
o-Xylene	25.1	2.0	ug/l	25.0	0.32	99	65-125			
Xylenes, Total	77.8	4.0	ug/l	75.0	2.3	101	65-135			
Di-isopropyl Ether (DIPE)	27.5	5.0	ug/l	25.0	0.33	109	65-140			
Ethyl tert-Butyl Ether (ETBE)	26.5	5.0	ug/l	25.0	ND	106	60-140			
tert-Amyl Methyl Ether (TAME)	26.9	5.0	ug/l	25.0	ND	108	55-145			
Methyl-tert-butyl Ether (MTBE)	27.7	5.0	ug/l	25.0	1.1	106	50-155			
tert-Butanol (TBA)	125	50	ug/l	125	ND	100	65-145			
Ethanol	226	150	ug/l	250	ND	90	35-165			
Surrogate: Dibromofluoromethane	26.1		ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	25.9		ug/l	25.0		104	80-120			
Surrogate: 4-Bromofluorobenzene	25.1		ug/l	25.0		100	80-120			
Matrix Spike Dup Analyzed: 11/26/04 (4K26020-MSD1)					Source: INK1253-01					
Benzene	29.3	2.0	ug/l	25.0	4.0	101	70-120	0	20	
Ethylbenzene	25.9	2.0	ug/l	25.0	0.89	100	70-130	0	20	
Toluene	27.2	2.0	ug/l	25.0	1.0	105	70-120	0	20	
m,p-Xylenes	52.4	2.0	ug/l	50.0	1.9	101	65-130	1	25	
o-Xylene	25.0	2.0	ug/l	25.0	0.32	99	65-125	0	20	
Xylenes, Total	77.5	4.0	ug/l	75.0	2.3	100	65-135	0	20	
Di-isopropyl Ether (DIPE)	27.0	5.0	ug/l	25.0	0.33	107	65-140	2	25	
Ethyl tert-Butyl Ether (ETBE)	25.8	5.0	ug/l	25.0	ND	103	60-140	3	25	
tert-Amyl Methyl Ether (TAME)	26.5	5.0	ug/l	25.0	ND	106	55-145	1	30	
Methyl-tert-butyl Ether (MTBE)	27.2	5.0	ug/l	25.0	1.1	104	50-155	2	25	
tert-Butanol (TBA)	125	50	ug/l	125	ND	100	65-145	0	25	
Ethanol	236	150	ug/l	250	ND	94	35-165	4	30	
Surrogate: Dibromofluoromethane	26.0		ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	26.2		ug/l	25.0		105	80-120			
Surrogate: 4-Bromofluorobenzene	24.7		ug/l	25.0		99	80-120			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1253 <Page 10 of 16>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate

Report Number: INK1253

Sampled: 11/16/04

Received: 11/17/04

METHOD BLANK/QC DATA

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K26035 Extracted: 11/26/04										
Blank Analyzed: 11/26/04 (4K26035-BLK1)										
Benzene	ND	2.0	ug/l							
Ethylbenzene	ND	2.0	ug/l							
Toluene	ND	2.0	ug/l							
m,p-Xylenes	ND	2.0	ug/l							
o-Xylene	ND	2.0	ug/l							
Xylenes, Total	ND	4.0	ug/l							
Di-isopropyl Ether (DIPE)	ND	5.0	ug/l							
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	ug/l							
tert-Amyl Methyl Ether (TAME)	ND	5.0	ug/l							
Methyl-tert-butyl Ether (MTBE)	ND	5.0	ug/l							
tert-Butanol (TBA)	ND	50	ug/l							
Ethanol	ND	150	ug/l							
Surrogate: Dibromofluoromethane	27.2		ug/l	25.0		109	80-120			
Surrogate: Toluene-d8	28.2		ug/l	25.0		113	80-120			
Surrogate: 4-Bromofluorobenzene	27.1		ug/l	25.0		108	80-120			
LCS Analyzed: 11/26/04 (4K26035-BS1)										
Benzene	25.0	2.0	ug/l	25.0		100	70-120			
Ethylbenzene	27.1	2.0	ug/l	25.0		108	80-120			
Toluene	25.3	2.0	ug/l	25.0		101	75-120			
m,p-Xylenes	54.0	2.0	ug/l	50.0		108	75-120			
o-Xylene	25.9	2.0	ug/l	25.0		104	75-125			
Xylenes, Total	79.9	4.0	ug/l	75.0		107	75-125			
Di-isopropyl Ether (DIPE)	26.9	5.0	ug/l	25.0		108	65-135			
Ethyl tert-Butyl Ether (ETBE)	25.7	5.0	ug/l	25.0		103	60-140			
tert-Amyl Methyl Ether (TAME)	25.4	5.0	ug/l	25.0		102	60-140			
Methyl-tert-butyl Ether (MTBE)	24.8	5.0	ug/l	25.0		99	55-145			
tert-Butanol (TBA)	159	50	ug/l	125		127	70-140			
Ethanol	298	150	ug/l	250		119	35-165			
Surrogate: Dibromofluoromethane	27.3		ug/l	25.0		109	80-120			
Surrogate: Toluene-d8	29.0		ug/l	25.0		116	80-120			
Surrogate: 4-Bromofluorobenzene	28.6		ug/l	25.0		114	80-120			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1253 <Page 11 of 16>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate

Report Number: INK1253

Sampled: 11/16/04
 Received: 11/17/04

METHOD BLANK/QC DATA

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K26035 Extracted: 11/26/04										
Matrix Spike Analyzed: 11/26/04 (4K26035-MS1)					Source: INK1380-01					
Benzene	22.5	2.0	ug/l	25.0	ND	90	70-120			
Ethylbenzene	26.0	2.0	ug/l	25.0	ND	104	70-130			
Toluene	22.9	2.0	ug/l	25.0	ND	92	70-120			
m,p-Xylenes	50.9	2.0	ug/l	50.0	ND	102	65-130			
o-Xylene	24.6	2.0	ug/l	25.0	ND	98	65-125			
Xylenes, Total	75.5	4.0	ug/l	75.0	ND	101	65-135			
Di-isopropyl Ether (DIPE)	26.1	5.0	ug/l	25.0	ND	104	65-140			
Ethyl tert-Butyl Ether (ETBE)	25.8	5.0	ug/l	25.0	ND	103	60-140			
tert-Amyl Methyl Ether (TAME)	25.6	5.0	ug/l	25.0	ND	102	55-145			
Methyl-tert-butyl Ether (MTBE)	25.0	5.0	ug/l	25.0	ND	100	50-155			
tert-Butanol (TBA)	163	50	ug/l	125	ND	130	65-145			
Ethanol	409	150	ug/l	250	ND	164	35-165			
Surrogate: Dibromofluoromethane	28.7		ug/l	25.0		115	80-120			
Surrogate: Toluene-d8	28.8		ug/l	25.0		115	80-120			
Surrogate: 4-Bromofluorobenzene	28.4		ug/l	25.0		114	80-120			
Matrix Spike Dup Analyzed: 11/26/04 (4K26035-MSD1)					Source: INK1380-01					
Benzene	26.5	2.0	ug/l	25.0	ND	106	70-120	16	20	
Ethylbenzene	29.0	2.0	ug/l	25.0	ND	116	70-130	11	20	
Toluene	27.0	2.0	ug/l	25.0	ND	108	70-120	16	20	
m,p-Xylenes	56.1	2.0	ug/l	50.0	ND	112	65-130	10	25	
o-Xylene	27.2	2.0	ug/l	25.0	ND	109	65-125	10	20	
Xylenes, Total	83.3	4.0	ug/l	75.0	ND	111	65-135	10	20	
Di-isopropyl Ether (DIPE)	29.2	5.0	ug/l	25.0	ND	117	65-140	11	25	
Ethyl tert-Butyl Ether (ETBE)	27.9	5.0	ug/l	25.0	ND	112	60-140	8	25	
tert-Amyl Methyl Ether (TAME)	27.2	5.0	ug/l	25.0	ND	109	55-145	6	30	
Methyl-tert-butyl Ether (MTBE)	28.1	5.0	ug/l	25.0	ND	112	50-155	12	25	
tert-Butanol (TBA)	168	50	ug/l	125	ND	134	65-145	3	25	
Ethanol	253	150	ug/l	250	ND	101	35-165	47	30	RA
Surrogate: Dibromofluoromethane	27.6		ug/l	25.0		110	80-120			
Surrogate: Toluene-d8	29.0		ug/l	25.0		116	80-120			
Surrogate: 4-Bromofluorobenzene	27.9		ug/l	25.0		112	80-120			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1253 <Page 12 of 16>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate
 Report Number: INK1253

Sampled: 11/16/04
 Received: 11/17/04

METHOD BLANK/QC DATA

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K29027 Extracted: 11/29/04										
Blank Analyzed: 11/29/04 (4K29027-BLK1)										
Benzene	ND	2.0	ug/l							
Ethylbenzene	ND	2.0	ug/l							
Toluene	ND	2.0	ug/l							
m,p-Xylenes	ND	2.0	ug/l							
o-Xylene	ND	2.0	ug/l							
Xylenes, Total	ND	4.0	ug/l							
Di-isopropyl Ether (DIPE)	ND	5.0	ug/l							
Ethyl tert-Butyl Ether (ETBE)	ND	5.0	ug/l							
tert-Amyl Methyl Ether (TAME)	ND	5.0	ug/l							
Methyl-tert-butyl Ether (MTBE)	ND	5.0	ug/l							
tert-Butanol (TBA)	ND	50	ug/l							
Ethanol	ND	150	ug/l							
Surrogate: Dibromofluoromethane	25.9		ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	26.8		ug/l	25.0		107	80-120			
Surrogate: 4-Bromofluorobenzene	25.2		ug/l	25.0		101	80-120			
LCS Analyzed: 11/29/04 (4K29027-BS1)										
Benzene	22.9	2.0	ug/l	25.0		92	70-120			
Ethylbenzene	22.6	2.0	ug/l	25.0		90	80-120			
Toluene	22.5	2.0	ug/l	25.0		90	75-120			
m,p-Xylenes	44.1	2.0	ug/l	50.0		88	75-120			
o-Xylene	21.8	2.0	ug/l	25.0		87	75-125			
Xylenes, Total	65.9	4.0	ug/l	75.0		88	75-125			
Di-isopropyl Ether (DIPE)	24.2	5.0	ug/l	25.0		97	65-135			
Ethyl tert-Butyl Ether (ETBE)	24.2	5.0	ug/l	25.0		97	60-140			
tert-Amyl Methyl Ether (TAME)	25.9	5.0	ug/l	25.0		104	60-140			
Methyl-tert-butyl Ether (MTBE)	27.0	5.0	ug/l	25.0		108	55-145			
tert-Butanol (TBA)	106	50	ug/l	125		85	70-140			
Ethanol	173	150	ug/l	250		69	35-165			
Surrogate: Dibromofluoromethane	26.2		ug/l	25.0		105	80-120			
Surrogate: Toluene-d8	27.0		ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	25.2		ug/l	25.0		101	80-120			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1253 <Page 13 of 16>



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
 1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
 290 Conejo Ridge Avenue, Suite 200
 Thousand Oaks, CA 91361
 Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate

Report Number: INK1253

Sampled: 11/16/04
 Received: 11/17/04

METHOD BLANK/QC DATA

BTEX/OXYGENATES by GC/MS (EPA 8260B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limits	RPD	RPD Limit	Data Qualifiers
Batch: 4K29027 Extracted: 11/29/04										
Matrix Spike Analyzed: 11/29/04 (4K29027-MS1)					Source: INK1455-07					
Benzene	24.3	2.0	ug/l	25.0	ND	97	70-120			
Ethylbenzene	24.2	2.0	ug/l	25.0	ND	97	70-130			
Toluene	23.8	2.0	ug/l	25.0	ND	95	70-120			
m,p-Xylenes	46.5	2.0	ug/l	50.0	ND	93	65-130			
o-Xylene	23.0	2.0	ug/l	25.0	ND	92	65-125			
Xylenes, Total	69.4	4.0	ug/l	75.0	ND	93	65-135			
Di-isopropyl Ether (DIPE)	25.2	5.0	ug/l	25.0	ND	101	65-140			
Ethyl tert-Butyl Ether (ETBE)	24.6	5.0	ug/l	25.0	ND	98	60-140			
tert-Amyl Methyl Ether (TAME)	24.6	5.0	ug/l	25.0	ND	98	55-145			
Methyl-tert-butyl Ether (MTBE)	24.2	5.0	ug/l	25.0	ND	97	50-155			
tert-Butanol (TBA)	121	50	ug/l	125	8.4	90	65-145			
Ethanol	115	150	ug/l	250	ND	46	35-165			
Surrogate: Dibromofluoromethane	26.0		ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	26.8		ug/l	25.0		107	80-120			
Surrogate: 4-Bromofluorobenzene	25.4		ug/l	25.0		102	80-120			
Matrix Spike Dup Analyzed: 11/29/04 (4K29027-MSD1)					Source: INK1455-07					
Benzene	23.5	2.0	ug/l	25.0	ND	94	70-120	3	20	
Ethylbenzene	23.2	2.0	ug/l	25.0	ND	93	70-130	4	20	
Toluene	23.0	2.0	ug/l	25.0	ND	92	70-120	3	20	
m,p-Xylenes	45.3	2.0	ug/l	50.0	ND	91	65-130	3	25	
o-Xylene	22.4	2.0	ug/l	25.0	ND	90	65-125	3	20	
Xylenes, Total	67.7	4.0	ug/l	75.0	ND	90	65-135	2	20	
Di-isopropyl Ether (DIPE)	24.4	5.0	ug/l	25.0	ND	98	65-140	3	25	
Ethyl tert-Butyl Ether (ETBE)	23.7	5.0	ug/l	25.0	ND	95	60-140	4	25	
tert-Amyl Methyl Ether (TAME)	23.9	5.0	ug/l	25.0	ND	96	55-145	3	30	
Methyl-tert-butyl Ether (MTBE)	23.8	5.0	ug/l	25.0	ND	95	50-155	2	25	
tert-Butanol (TBA)	118	50	ug/l	125	8.4	88	65-145	3	25	
Ethanol	220	150	ug/l	250	ND	88	35-165	63	30	RA
Surrogate: Dibromofluoromethane	26.1		ug/l	25.0		104	80-120			
Surrogate: Toluene-d8	27.1		ug/l	25.0		108	80-120			
Surrogate: 4-Bromofluorobenzene	25.1		ug/l	25.0		100	80-120			

Del Mar Analytical, Irvine
 Wendy Kirkeeng
 Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1253 <Page 14 of 16>



SECOR International, Inc.-Thousand Oaks
290 Conejo Ridge Avenue, Suite 200
Thousand Oaks, CA 91361
Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate

Report Number: INK1253

Sampled: 11/16/04

Received: 11/17/04

DATA QUALIFIERS AND DEFINITIONS

PC Sample taken from VOA vial with air bubble > 6mm diameter
PV Hydrocarbon result partly due to individ. peak(s) in quant. range
RA RPD exceeds limit due to matrix interf.; % recovs. within limits
ND Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.
RPD Relative Percent Difference

ADDITIONAL COMMENTS

For 8260 analyses:

Due to the high water solubility of alcohols and ketones, the calibration criteria for these compounds is <30% RSD.
The average % RSD of all compounds in the calibration is 15%, in accordance with EPA methods.

For GRO (C4-C12):

GRO (C4-C12) is quantitated against a gasoline standard. Quantitation begins immediately following the methanol peak.

8015 Analysis EDF Parlabel Cross Reference

EDF

Parlabel

Analyte
GRO (C4 - C12)

GROC4C12

Del Mar Analytical, Irvine
Wendy Kirkeeng
Project Manager



Del Mar Analytical

17461 Derian Ave., Suite 100, Irvine, CA 92614 (949) 261-1022 FAX (949) 260-3297
1014 E. Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (949) 370-1046
9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9689
9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
2520 E. Sunset Rd. #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

SECOR International, Inc.-Thousand Oaks
290 Conejo Ridge Avenue, Suite 200
Thousand Oaks, CA 91361
Attention: Gareth Roberts

Project ID: ARCO 5110, Southgate

Report Number: INK1253

Sampled: 11/16/04

Received: 11/17/04

Certification Summary

Del Mar Analytical, Irvine

Method	Matrix	NELAP	CA
EPA 8015B	Water	X	X
EPA 8260B	Water	X	X

NV and NELAP provide analyte specific accreditations. Analyte specific information for Del Mar Analytical may be obtained by contacting the laboratory or visiting our website at www.dmalabs.com.

Del Mar Analytical, Irvine

Wendy Kirkeeng
Project Manager

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical.

INK1253 <Page 16 of 16>



Chain of Custody Record

Page 1 of 1

Project Name: 2004-Q4 Groundwater
BP BU/AR Region/Enfos Segment: Terminal
State or Lead Regulatory Agency: Atlantic Richfield
Requested Due Date (mm/dd/yy): Standard TAT

On-site Time:	Temp:
Off-site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Lab Name:	Del Mar Analytical	BP/AR Facility No.:	5110	Consultant/Contractor:	SECOR International, Inc.
Address:	2852 Alton Ave.	BP/AR Facility Address:	5731 Firestone Blvd, South Gate, CA	Address:	290 Conejo Ridge Ave. #200
	Irvine, CA 92606	Site Lat/Long:	33.949/-118.165		Thousand Oaks, CA. 91361
Lab PM:	Chris Roberts	California Global ID No.:	T0603703915	Consultant/Contractor Project No.:	37BP.U5110.07
Tele/Fax:	949-261-1022 / 949-261-1228	Enfos Project No.:	G09K0-0105	Consultant/Contractor PM:	Gareth Roberts
BP/AR PM Contact:	Darrell Fah	Provision		Tele/Fax:	(805) 230-1266 / (805) 230-1277
Address:	4 Centre Point Dr.	Phase/WBS:	3 O&M WATER	Report Type & QC Level:	
	La Palma, CA	Sub Phase/Task:	ANALYTICAL	E-mail EDD To:	bauchard@secor.com
Tele/Fax:	(714) 378-5105	Cost Element:	SUBCONTRACTORS COST	Invoice to:	Consultant

Lab Bottle Order No:				Matrix			Laboratory No.	No. of Containers	Preservative					Requested Analysis										Sample Point Lat/Long and Comments
Item No.	Sample Description	Time	Date	Soil/Solid	Water/Liquid	Air			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	GRO (8015) C4-C12	BTEX/OXY/ET (8260)									
1	MW-A1	2120	11/16/04	X			INK1253	4				X		X	X									
2	MW-A2	2155	11/16/04	X				4				X		X	X									
3	MW-A3	1755	11/16/04	X				4				X		X	X									
4	MW-A4	2000	11/16/04	X				4				X		X	X									
5	MW-A5	2305	11/16/04	X				4				X		X	X									
6	MW-A6	2355	11/16/04	X				4				X		X	X									
7	MW-A7	2040	11/16/04	X				4				X		X	X									
8	DUP-5110-20041116	—	11/16/04	X				4				X		X	X									DUP TD
9																								
10																								

Sampler's Name:	Shaun Dickerson	Relinquished By / Affiliation:		Date:	11/17/04	Time:	1600	Accepted By / Affiliation:		Date:	11/17/04	Time:	1600
Sampler's Company:	SECOR International, Inc.				11/17/04		1810						
Shipment Date:													
Shipment Method:													
Shipment Tracking No:													

Special Instructions:			
Custody Seals In Place Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Temp Blank Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Cooler Temperature on Receipt <input checked="" type="checkbox"/> °F/C	Trip Blank Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Distribution: White Copy - Laboratory / Yellow Copy - BP/Atlantic Richfield Co. / Pink Copy - Consultant/Contractor

BP COC Rev. 4 10/1/04

(CS)

APPENDIX E

Waste Disposal Documentation

NO. 24194

NON-HAZARDOUS WASTE DATA FORM

GENERATING SITE

NAME BP West Coast Products LLCARCO STATION # 5110ADDRESS P.O. Box 802495731 FIRESTONE BLVD.CITY, STATE, ZIP Rancho Santa Margarita, CA 92688SOUTH GATEPHONE NO. (949) 753-5820SITE
CONTACT

PROFILE NO.

CONTAINERS: No. 1GALLONS X 178 Gallons

WEIGHT

TYPE: ☒ TANK TRUCK ☐ DUMP TRUCK ☐ DRUMS ☐ CARTONS ☐ OTHERWASTE DESCRIPTION NON-HAZARDOUS WATERGENERATING PROCESS GROUNDWATER SAMPLINGCOMPONENTS OF WASTE PPM %
1. WATER 99-100%2. TPH < 1%

3. _____

PROPERTIES pH 7 ☐ SOLID ☒ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHERHANDLING INSTRUCTIONS: WEAR APPROPRIATE PROTECTIVE CLOTHINGTHE GENERATOR CERTIFIES THAT THE
WASTE AS DESCRIBED IS 100%
NON-HAZARDOUS.Larry Moothart as Agent of BP West Coast Products LLC11 / 16 / 04

TYPED OR PRINTED FULL NAME & SIGNATURE

DATE

NAME NIETO AND SONS TRUCKING, INC.EPA
ID.
NO.ADDRESS 1281 BREA CANYON ROAD

SERVICE ORDER NO.

CITY, STATE, ZIP BREA, CALIFORNIA 92821

PICK UP DATE

PHONE NO. (714) 990-685511 / 16 / 04TRUCK, UNIT, I.D. NO. X 256

TYPED OR PRINTED FULL NAME & SIGNATURE

DATE

NAME DeManno KardonEPA
ID.
NO.

DISPOSAL METHOD

ADDRESS 2000 N. Alameda Street☐ LANDFILL ☒ RECYCLERCITY, STATE, ZIP Compton, CA 90222RecyclerPHONE NO. 310-537-7100

TYPED OR PRINTED FULL NAME & SIGNATURE

DATE

GEN	OLD/NEW	L	A	TONS
TRANS		S	S	
C/D		RT/CO	HWDF	NONE

DISCREPANCY

APPENDIX F

Updated Plume Travel Time Report

July 15, 2004

Ms. Harry Nguyen
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street
Los Angeles, California 90013-1104

**Re: Updated Plume Travel Time Report
ARCO Station No. 5110
5731 East Firestone Boulevard
South Gate, California
LARWQCB File No. I-12074**

Dear Mr. Nguyen:

This report, prepared by SECOR International Incorporated (SECOR) on behalf of Atlantic Richfield Company (Atlantic Richfield), presents the following plume travel time determination for the above referenced site (the Site) (Figures 1 and 2). The estimated plume travel time is 130.5 years.

INTRODUCTION

This report was prepared in response to the Los Angeles Regional Water Quality Control Board (LARWQCB) letters dated February 28, 2003 and August 27, 2003, titled *Implementation of Final Draft Guidelines for the Investigation and Cleanup of MTBE and Other Oxygenates*. The LARWQCB letters included a directive to determine or estimate the time for MTBE at a concentration of 13 ug/L to reach the nearest receptor utilizing a mainstream or industry recognized fate and transport analytical model and submit a technical report documenting the modeling work and results. The directive stated that an extensive or detailed modeling effort is not required nor is that the objective. This report includes a description of the analytical model utilized, a description of the process used to arrive at the model results, justification for assumptions used, and recommendations for additional work that could reduce model uncertainties.

The nearest receptor is Municipal Well No. 02S/12W-31Q02 (SG-25), located approximately 1,800 feet southwest of the Site. Groundwater flow direction is towards the south, with the receptors being approximately down-to cross-gradient of the site.

MODEL DESCRIPTION

BIOSCREEN is a screening model that simulates remediation through natural attenuation (RNA) of dissolved hydrocarbons at petroleum fuel release sites. The software is programmed in the Microsoft Excel spreadsheet environment and based on the Domenico analytical solute transport model. It was developed for the Air Force Center for Environmental Excellence (AFCEE) Technology Transfer Division at Brooks Air Force Base by Groundwater Services, Inc., Houston, Texas. It has the ability to simulate advection, dispersion, adsorption, and aerobic decay as well as anaerobic reactions that have been shown to be the dominant biodegradation processes at many petroleum release sites. BIOSCREEN includes three different model types: 1) Solute transport without decay, 2) Solute transport with biodegradation modeled as a first-order decay process, and 3) Solute transport with biodegradation modeled as an instantaneous biodegradation reaction. The model is designed to simulate biodegradation by both aerobic and anaerobic reactions.

MODEL LIMITATIONS

As an analytical model, BIOSCREEN assumes simple groundwater flow conditions, including isotropic and homogeneous aquifer conditions. The model should not be applied where pumping systems create a complicated flow field. In addition, the model should not be applied if vertical flow gradients affect contaminant transport. As a screening tool, BIOSCREEN only approximates complicated processes that occur in the saturated subsurface. The model should not be applied if extremely detailed results that closely match site conditions are required. Because methyl tertiary butyl ether (MTBE) would theoretically be the first constituent to reach the receptor, the model parameters are based on MTBE and not other gasoline constituents that might be in the groundwater.

MODEL INPUT PARAMETERS

The BIOSCREEN analytical model requires input of the following hydrogeologic data:

- Seepage velocity, or average linear velocity as calculated from hydraulic conductivity, hydraulic gradient, and effective porosity;
- Dispersivity (based on the length of the plume);
- Retardation (input directly or calculated from soil bulk density, partition coefficient and fraction organic carbon);
- Decay rates or concentrations of electron acceptors if biodegradation is included;
- Source data (contaminant concentrations and spatial distribution in the source area);
- Modeled area length and width; and
- Simulation time.

Seepage Velocity

Seepage velocity, or average linear velocity, was estimated using the hydraulic gradient determined from groundwater elevation data collected at the site, hydraulic conductivity and effective porosity estimated from the saturated zone lithology. The average of the quarterly hydraulic gradients for the last four groundwater monitoring events is 0.010 feet/foot towards the south. The lithology of the saturated zone is primarily poorly graded sand, silt, sandy silt, silty sand. The hydraulic conductivity is estimated to be 0.0001 centimeters per second (cm/s) and the effective porosity is estimated to be 0.3 (Freeze and Cherry, 1979). This results in a seepage velocity of 3.4 feet per year.

Dispersivity

BIOSCREEN includes a simple empirical estimation of longitudinal and transverse dispersivity based on plume length and published dispersion studies. Because the objective of the modeling is to estimate the travel time to the nearest receptor, it is assumed that the plume length is equal to the distance to the nearest receptor. For this site, the nearest receptor is Municipal Well No. 02S/12W-31Q02 (SG-25), located approximately 1,800 feet southwest of the Site. This results in BIOSCREEN estimating a longitudinal dispersivity of 31.0 feet and a transverse dispersivity of 3.1 feet.

Retardation

MTBE is highly soluble and is essentially non-retarded when being transported by groundwater movement in the subsurface. Therefore, the retardation factor used in the model is 1.0.

Biodegradation

Solute transport with biodegradation as a first-order decay process is modeled, as well as transport without biodegradation. Literature values of first-order decay coefficients for MTBE range from 0.001899 per year to 0.01238 per year (Howard et al. 1991). A decay coefficient between the high and low values, 0.0071 per year (or a half-life of 97 years), was used in the model. The non-biodegradation case of the model was used to estimate plume travel time.

Source Data

The source zone thickness was set at 10 feet, as recommended in the BIOSCREEN user's manual. The source area width is estimated to be 40 feet, the width of the former underground storage tank cavity. The source area concentration is set at the maximum historical MTBE concentration in groundwater of 11 milligrams per liter (mg/L) in well D-1 on December 7, 1999. To be conservative, an infinite source mass is assumed.

ASSUMPTIONS

The following assumptions, which may not represent field conditions, are made for this plume travel time modeling estimate:

- The aquifer is of infinite horizontal extent;
- The hydraulic conductivity and effective porosity is homogeneous and isotropic;
- The groundwater linear velocity is spatially and temporally constant;
- The plume remains within the upper groundwater bearing zone;
- The nearest receptor, Municipal Well No. 02S/12W-31Q02 (SG-25), is located directly downgradient of the Site; and
- The plume travel time is the time for the primary MCL concentration of 13 ug/L to reach the receptor.

CALIBRATION

The model was calibrated based on the time between the estimated release of MTBE at the Site, and the first detection of MTBE in groundwater at groundwater monitoring well MW-A5 (at 0.0003 mg/L), located approximately 250 feet down gradient of the source area, in June 2002. MTBE was first analyzed for and detected in groundwater beneath the Site in July of 1996, so this is the earliest documented date of MTBE at the Site. With a source concentration of 11 mg/L, and a travel time of 8.85 years to reach MW-A5, the hydraulic conductivity was adjusted until a concentration of 0.0003 mg/L reached 250 feet from the source. The longitudinal dispersivity was set at 12.5 feet, based on a plume length of 250 feet. The calibration of the model resulted in a hydraulic conductivity of 0.00026 cm/s and a seepage velocity of 9.0 feet per year.

RESULTS

The plume travel time was estimated by adjusting the simulation time until the concentration at the distance to the receptor was 13 ug/L, which is the primary MCL for MTBE. Using the parameters presented above, the plume travel time to the receptor is estimated to be 130.5 years. Printouts of the model input and corresponding output are provided in Attachment A.

DISCUSSION

A conservative estimate of the plume travel time from the Site to the nearest receptor, Municipal Well No. 02S/12W-31Q02 (SG-25), located approximately 1,800 feet southwest of the Site and approximately down gradient of the Site, was made using BIOSCREEN, a Microsoft Excel spreadsheet analytical model based on the Domenico analytical solute transport model. The model input included estimations of hydraulic conductivity and effective porosity based on the saturated zone lithology and literature values, a hydraulic gradient based on field measured groundwater elevations, and MTBE concentrations in groundwater at the site. The travel time of only the MTBE plume was estimated, as this would be the first constituent to reach the receptor. It is assumed that biodegradation of MTBE was not occurring, but if it were assumed to be occurring, the plume travel time estimate would be longer. The plume travel time estimated, 130.5 years, is the modeled time for the MTBE concentration in groundwater to reach 13 ug/L, the primary MCL of MTBE, at 1,800 feet from the Site, which is the distance to the nearest receptor.

There do not appear to be any conditions at the Site that would result in the analytical model results to be less conservative.

RECOMMENDATIONS

The plume travel time estimate should be revised after additional site characterization has been performed, if this work provides new information that could be used to improve the calibration.

LIMITATIONS

This report has been prepared for the exclusive use of Atlantic Richfield Company and its representatives as it pertains to ARCO Station No. 5110, located at 5731 East Firestone Boulevard, South Gate, California. The information contained in this report represents our professional opinions and is based, in part, on currently available information arrived at in accordance with currently accepted hydrogeological practices at this time and location. No other interpretations, warranties, guarantees, expressed or implied, are included or intended in the report findings.

If you have any questions regarding this *Plume Travel Time Determination Report*, please feel free to contact the undersigned at 713.379.3366.

Respectively Submitted,

SECOR International Incorporated

Noel Phillip
Staff Hydrogeologist

Gareth Roberts, RG No. 7442
Project Manager

Attachments:

Attachment A – BIOSCREEN Input and Output - Calibration

Attachment B – BIOSCREEN Input and Output – Plume Travel Time Estimate

REFERENCES

EPA, 1996. *BIOSCREEN Natural Attenuation Decision Support System, User's Manual*.

Freeze, R.A. and J.A. Cherry, 1979. *Groundwater*. Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

Howard, P.H., R.S. Boethling, W.F. Jarvis, W.M. Meylan, and E.M. Michalenko, 1991. *Handbook of Environmental Degradation Rates*, Lewis Publishers, CRC Press, Boca Raton, Florida.

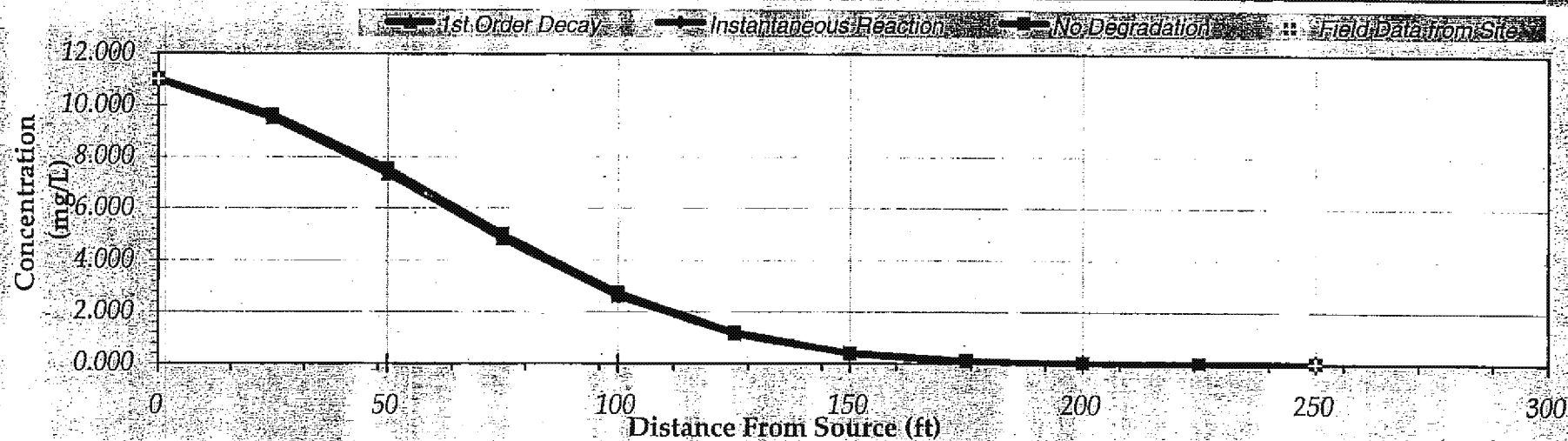
ATTACHMENT A

BIOSCREEN INPUT AND OUTPUT – CALIBRATION

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	25	50	75	100	125	150	175	200	225	250.0000
No Degradation	11.000	9.632	7.529	4.992	2.732	1.195	0.408	0.106	0.021	0.003	0.000
1st Order Decay	11.000	9.513	7.346	4.826	2.624	1.143	0.388	0.101	0.020	0.003	0.000
Inst. Reaction	11.000	9.632	7.529	4.992	2.732	1.195	0.408	0.106	0.021	0.003	0.000
Field Data from Site	11.000										0.0003



Calculate Animation

Time:

8.85 Years

Return to Input

Recalculate This Sheet

APPENDIX B

BIOSCREEN INPUT AND OUTPUT – PLUME TRAVEL TIME ESTIMATE

BIOSCREEN Natural Attenuation Decision Support System

ARCO 5110

Version 1.0

ARCO 5110

12/88

On-Screen Instructions

1.0

2.0

3.0

4.0

5.0

6.0

7.0

8.0

9.0

10.0

11.0

12.0

13.0

14.0

15.0

16.0

17.0

18.0

19.0

20.0

21.0

22.0

23.0

24.0

25.0

26.0

27.0

28.0

29.0

30.0

31.0

32.0

33.0

34.0

35.0

36.0

37.0

38.0

39.0

40.0

41.0

42.0

43.0

44.0

45.0

46.0

47.0

48.0

49.0

50.0

1. HYDROGEOLOGY

Recharge Velocity: m/d

Hydraulic Conductivity: m/d

Hydraulic Gradient: m/m

Porosity: m³/m³

2. DISPERSION

Longitudinal Dispersion: m

Transverse Dispersion: m

Vertical Dispersion: m

Estimated Plume Length: m

3. ADSORPTION

Retention Factor: m³/m³

Sorption Capacity: m³/m³

Partition Coefficient: m³/m³

Effective porosity: m³/m³

4. BIOREMEDIATION

First Order Decay Coeff: 1/d

Solubility: mg/L

or Interfacial Reaction Model

Rate Coeff: 1/d

Rate Coeff: 1/d

Observed Plume Length: m

Observed Plume Length: m

Observed Plume Length: m

5. GENERAL

Model Run Length: m

Model Run Width: m

Model Run Time: h

6. SOURCE DATA

Source 1 Location: m

Source 2 Location: m

7. MONITORING DATA

0	0
0	0
40	11
0	0
0	0

8. SOURCE DATA (see Help)

Source 1: m

Source 2: m

9. MONITORING DATA (see Help)

Monitoring Point: m

10. MONITORING DATA (see Help)

Monitoring Point: m

11. FIELD DATA FOR COMPARISON

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

Concentration: mg/L

12. CHOOSE TYPE OF OUTPUT TO SEE

RUN
CENTERLINE

RUN ARRAY

View Output

View Output

Help

Recalculate This
Sheet

Paste Example Dataset

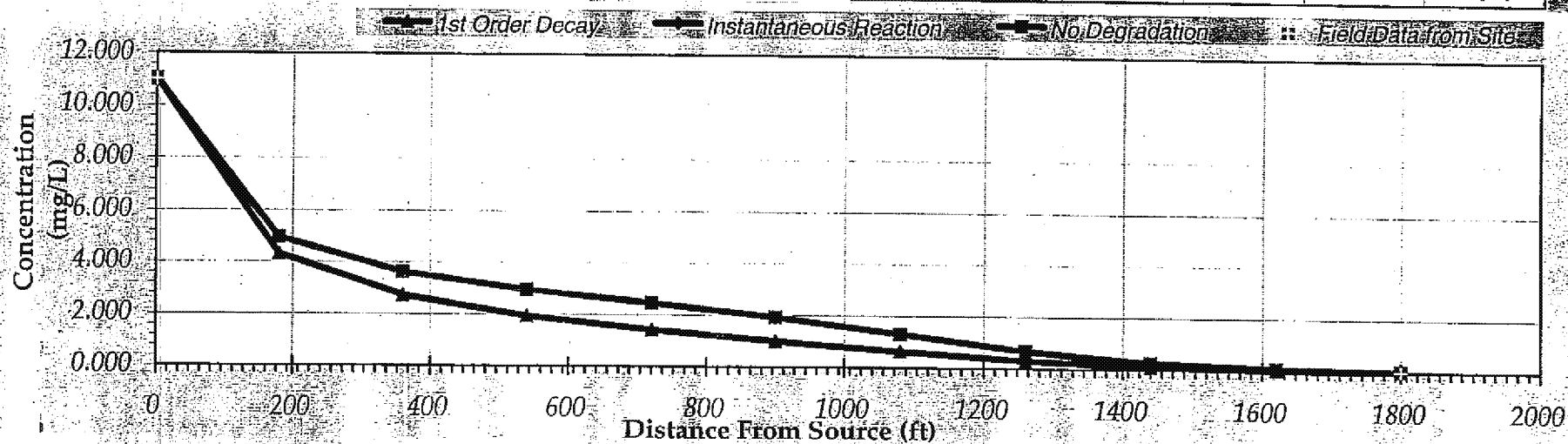
Restore Formulas for K_d ,
Dispersion, R_L , Interfacial, other

10/10/88

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	180	360	540	720	900	1080	1260	1440	1620	1800
No Degradation	11.000	4.956	3.602	2.942	2.454	1.928	1.299	0.687	0.266	0.072	0.013
1st Order Decay	11.000	4.301	2.715	1.932	1.420	1.004	0.626	0.314	0.117	0.031	0.006
Inst. Reaction	11.000	4.956	3.602	2.942	2.454	1.928	1.299	0.687	0.266	0.072	0.013
Field Data from Site	11.000										0.013



Calculate Animation

Time:

130.5 Years

Return to Input

Recalculate This Sheet